

AIRFIX magazine

December 1974

FOR PLASTIC MODELLERS

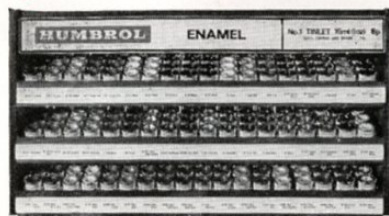
monthly 22p



in this issue

New series Army/Air colours 1914-1937
The Fleet Air Arm at war 1939-1945
Modelling the HS 1182 Hawk in 1:72 scale

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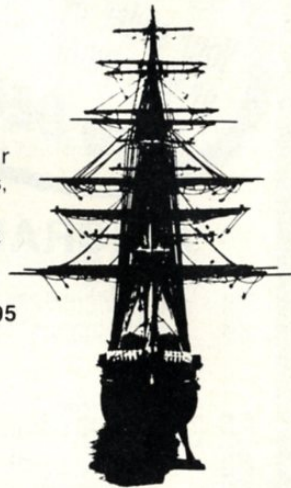
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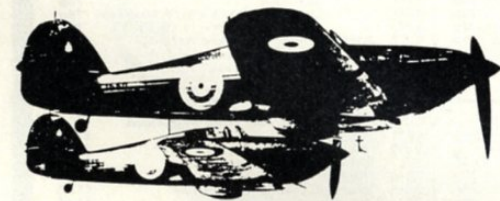
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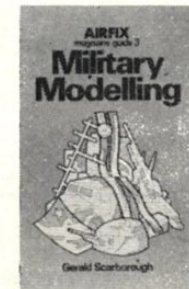
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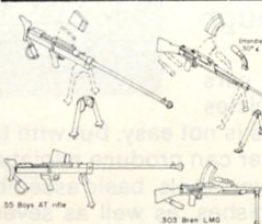
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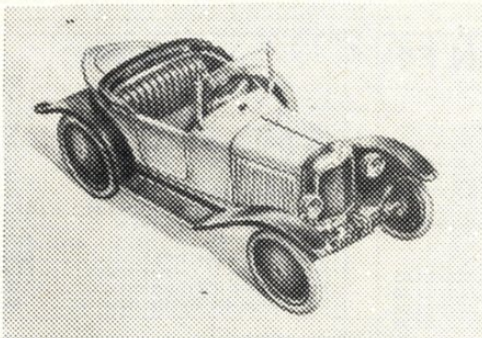
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AIRFIX magazine

December 1974
Volume 16 Number 4

FOR PLASTIC MODELLERS

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Editor **Bruce Quarrie**
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Cover Picture

To launch our new series on Army/Air colours and ground co-operation aircraft (which will eventually cover the entire period up to the present day) we thought it would be appropriate to show an example of modern liaison. Pictured in this Ministry of Defence photo is an army Sioux helicopter whose pilot is discussing a recce with an officer of the Parachute Regiment during an exercise 'somewhere in England'.

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Airfix Magazine is published for the proprietors, Airfix Products Limited, by PSL Publications Limited, on the fourth Friday of each month. Annual subscription rate £3.40 (USA \$8.75) from Surridge Dawson & Company (Productions) Limited. Second Class postage paid at New York Post Office, NY.



December 1974

Terry Gander and Neil Crosby

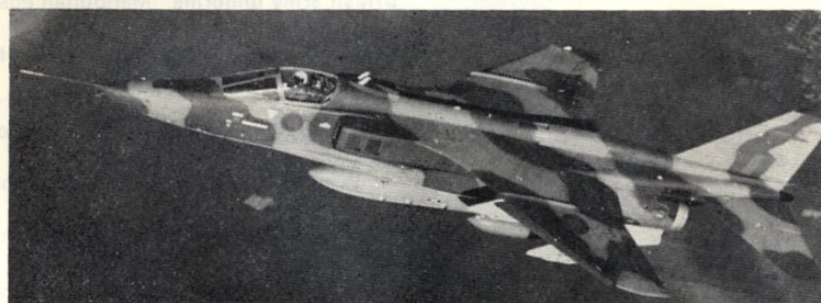


in the air

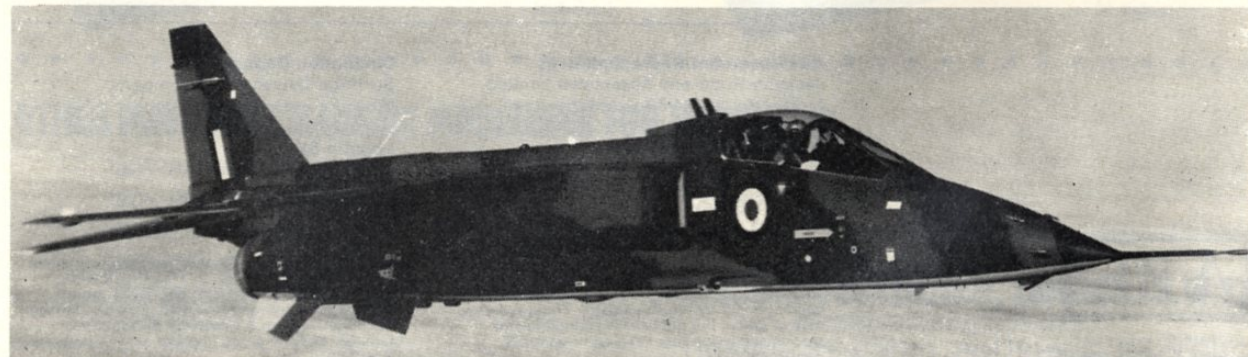
Picture profile — the Anglo-French Jaguar



Right XX109, the second production GR 1, flying over Wiltshire, January 1974. Note laser nose (G. Randall, A&AEE Boscombe Down via MoD).

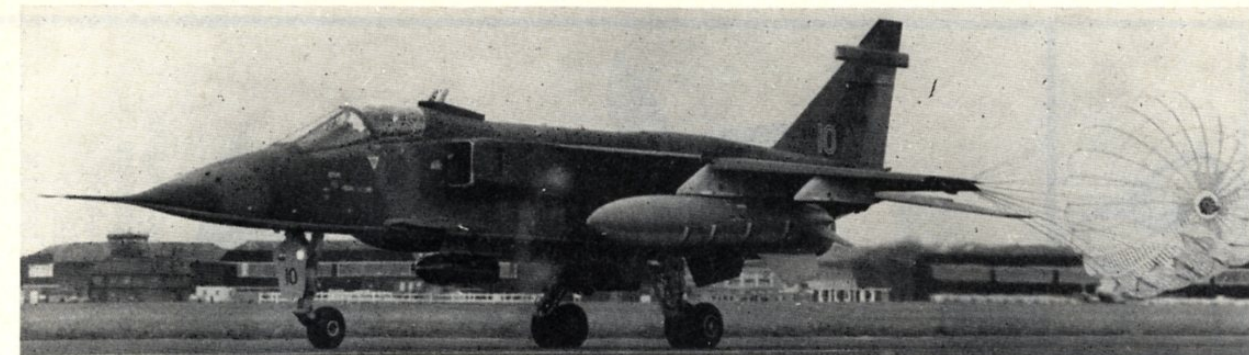


Below one of the early GR 1s, XW560, before the introduction of 'B' type roundels (MoD).

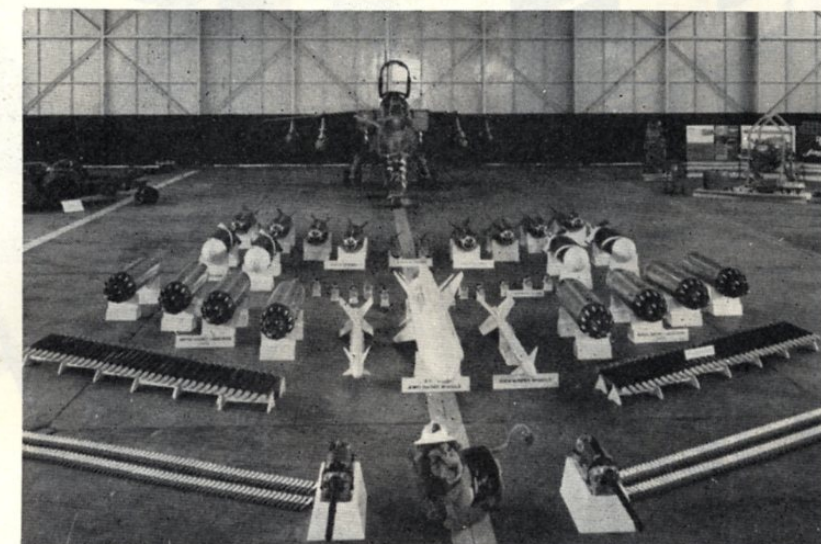


Above one of the first single-seat Jaguar versions photographed at Lossiemouth in October 1973 (MoD). The aircraft first entered service on September 13 1973.

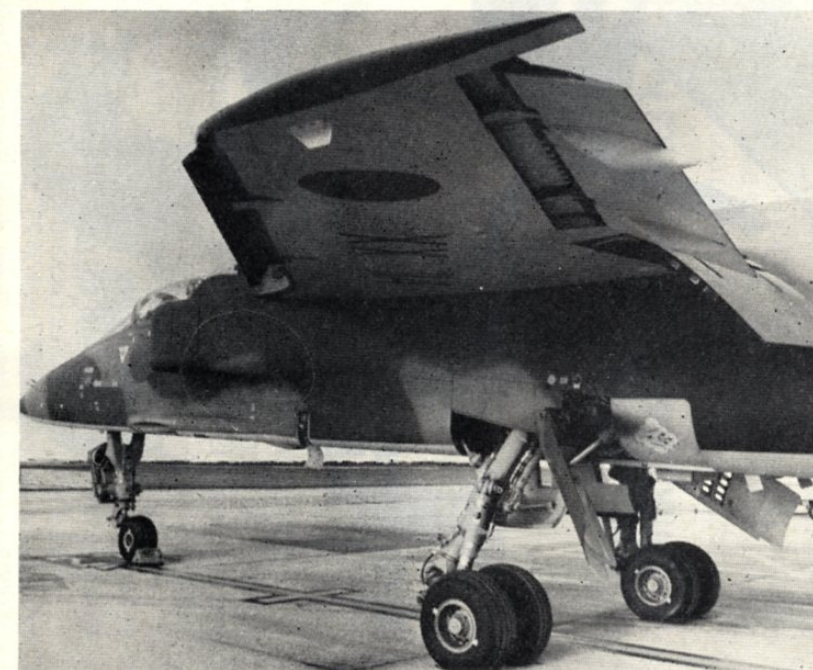
Left line up of Jaguar GR 1s (with numbers on tail) and two-seat T Mk 2s (with letters on tail) at Lossiemouth, May 1974 (MoD). The GR 1 is now in service with Nos 6 and 54 Squadrons, the T Mk 2 with the Jaguar Operational Conversion Unit. 6 Squadron Jaguars based at Lossiemouth, carry the squadron's familiar 'can opener' motif in a red circle either side of the intakes, 54 Squadron aircraft from Coltishall have the squadron badge of a blue lion on a yellow shield on the nose and checks on engine intake sides.



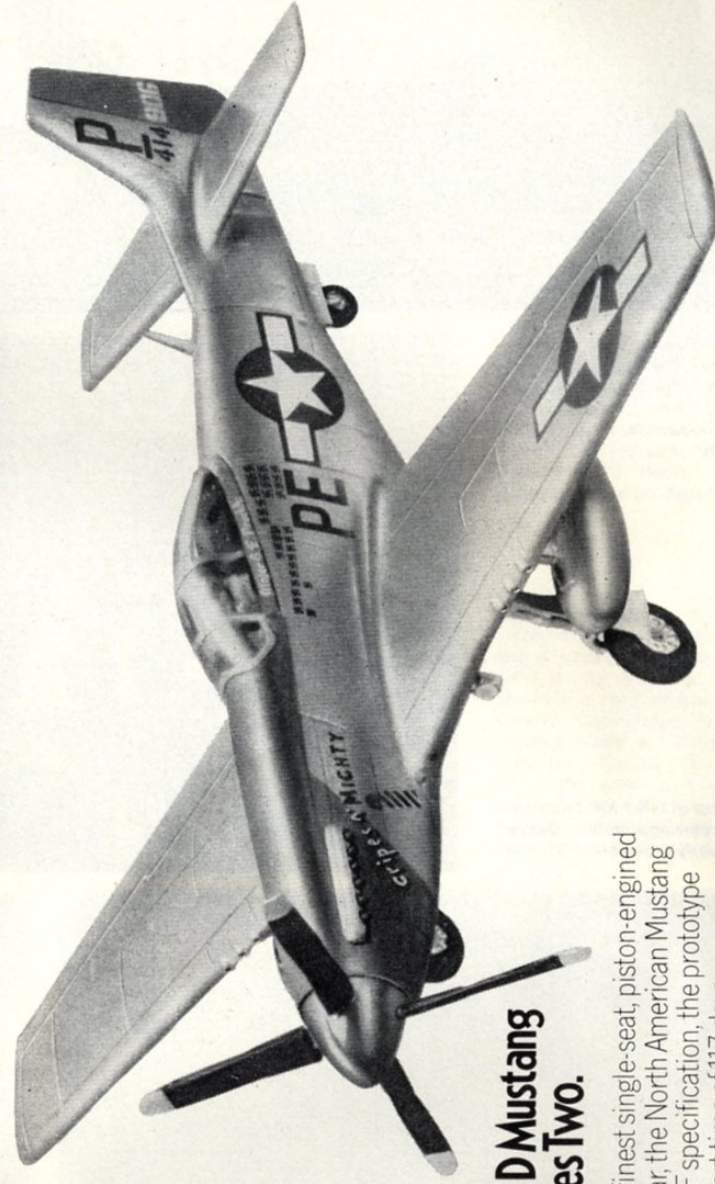
Above GR 1 lands at Lossiemouth with the help of its braking parachute. **Right** showing some of the possible armaments carried by the Jaguar, including flares, 1,000lb bombs, Matra rocket pods, Sidewinder missiles and 30mm cannon (MoD).



Below useful close-up of GR 1 XX114 showing flap and undercarriage detail. **Below right** rear end of an early production GR 1 at Lossiemouth (MoD).



NEWG AIRFIX MODELS



North American P-51 D Mustang 1/72 Scale Series Two.

Regarded by many as the finest single-seat, piston-engined fighter of the Second World War, the North American Mustang was designed in 1940 to an RAF specification, the prototype being built in the incredibly short time of 117 days.

The Mustang is famous for its bomber escort role with the US Army Air Forces but it also contributed to the Pacific war in which, by virtue of its long range, it was well suited.

The 1,450hp Rolls Royce Packard-built Merlin engine produced a top speed of 437 mph at 25,000ft, a service ceiling of 41,900ft and a range with two 75 gal. drop tanks of 650 miles.

The new Airfix kit features six .5ins. Browning machine guns and provision for two 500lb bombs underwing. Markings are provided for a P-51D of the 352nd Fighter Group in which Major George E. Preddy scored many of his 31 victories. An optional scheme is given for a P-51K of 3 Sqn. RAAF, based at Fano, Italy 1944.



French Cuirassier 1815 7th.Regiment 54mm Scale Collectors Series Two.

The subject of this beautifully detailed construction kit is a trooper of the 7th regiment, 12 regiments being present at Waterloo. The 7th and 12th formed Travers Brigade, which after an engagement with the British Household Cavalry assisted with the destruction of the Scots Greys, and other remnants of the Union Brigade.

Templates are provided for cutting the straps, belts and reins and the trooper can be modelled carrying a pistol or sword.



George Washington 54mm Scale Collectors Series Two.

George Washington was promoted to Commander-in-Chief shortly after the beginning of the War of Independence in 1775 replacing the older General Artemas Ward. He proved himself a brilliant and courageous leader who after some defeats, many setbacks and much hardship, finally lead his army to victory. The final peace treaty was signed in Paris in 1783.

This Airfix model of George Washington comes with a template for accurate cutting of the belts, reins and straps.

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8th army in the desert

HQ and MMG figure conversions by John Sandars

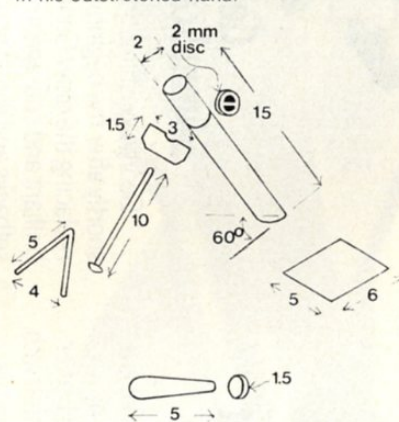
IN ADDITION TO the rifle companies, the infantry battalion in the Desert had a headquarters company which contained most of its heavy support weapons, and a platoon of medium machine-guns were often attached to it (see *Airfix Magazine*, September 1973).

Airfix 00/HO figures are again suitable for conversion to HQ company and MMG personnel, but more has to be done to scratch-build the necessary weapons than in the rifle companies. In this article we shall see how we can make men and weapons for the mortar, pioneer and anti-tank platoons, along with medium machine-guns and their detachments.

The 3-inch mortar platoon would have had six mortars, each with a detachment of three or four men, and a small HQ. War-games detachments are often reduced to two men, and these are shown here. The mortar itself is easily made from a length of 2mm plastic rod, or 1/16in wooden dowel. The baseplate and sight gear are cut from thin card, and the legs are from two pins. The whole is stuck together with Uhu and coated with Unibond for strength before painting. The barrel, baseplate, and legs are painted desert yellow, or dark green, while the sighting gear, top 3mm of the barrel, and centre leg are steel. The mortar bombs are made from the tapered ends of cocktail sticks and card discs. They are painted black with a yellow nose. The mortar muzzle caps are cut from the straight section of a cocktail stick, and are painted leather, or dark earth.

Various figures are suitable for mortar detachments. Two groups are shown here. On the left two kneeling gunners from the Airfix 25-pdr kit have been used almost unaltered; one has had a muzzle cap glued to his outstretched hand, while the other has

had a 25-pdr round cut away and replaced with a mortar bomb. On the right a wounded rifleman from the 8th Army set has had his weapon cut away and replaced by a bomb, and his head turned to make him look as if he is about to drop the bomb down the mortar barrel, while the figure with his rifle at the trail from the same set has also been disarmed, and a muzzle cap placed in his outstretched hand.

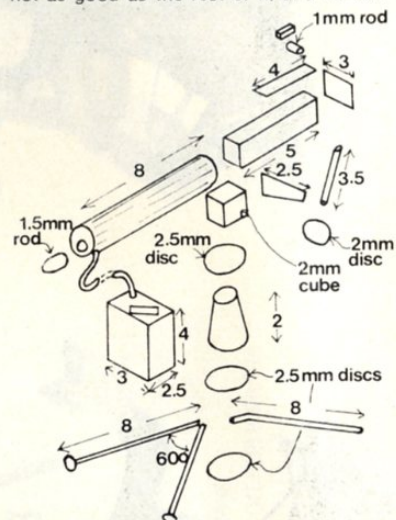


Above assembly sketch for 3-inch mortar; all dimensions in millimetres. Below 1:76 scale side view of mortar. Foot of page two mortars and their detachments.

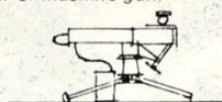


Vickers MMG with converted figures showing gun with its tripod in the high position.

There is a medium machine-gun in the 8th Army set, but for a good model it is best to start from scratch, or use the barrel from the new 8th Army set which has just been released. Even if this is used the tripod is not as good as the rest of it, and no con-



Above assembly sketch for Vickers MMG; all dimensions in millimetres. Below 1:76 scale side view of machine-gun.



denser tin is provided, so it is as well to make these anyway. An MMG platoon would have had four Vickers guns, each with a three-man detachment, as well as an HQ with rangefinders etc. This last can be made by drilling a hole sideways through the binoculars on the lying figure, and inserting a short length of plastic rod to represent a Barr & Stroud metre base rangefinder.

The guns themselves can be made with the tripods either in the high or low positions. In either case the barrel is made from wood dowel, and the tripod from pins and cocktail stick. Other parts use plastic rod and postcard. The wooden condenser is best glued between the front legs of the tripod as shown, since this not only makes

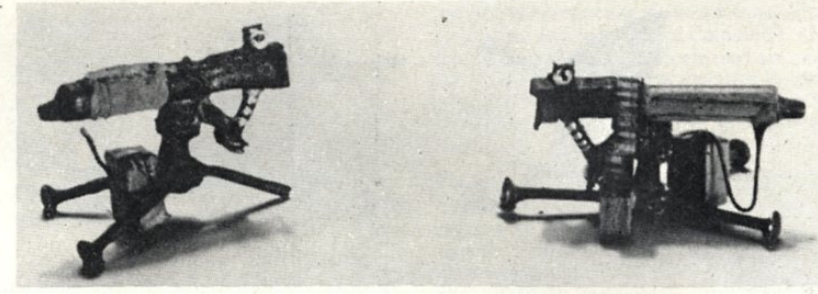
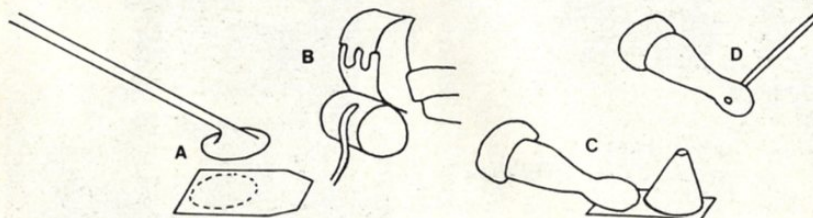


Vickers MMG with converted figures showing gun with its tripod in the low position.

the whole mounting more rigid, but also prevents it getting pulled off the end of its fusewire tube connecting it to the barrel. In the photo the left-hand gun has a tissue water jacket cover glued around the barrel, and the right-one has a wooden ammunition box and paper belt attached. Both guns are painted metallic black, with the exception of the barrels, which are desert yellow, and sights, elevating screws, etc, which are silver.

For the gun in the high position the loader provided can be used, but the layer would be unlikely to kneel behind the gun, so his top half is glued to the lower half of a crawling rifleman, so that he sits with one leg each side of the gun. In the low position the drill book poses for the detachment require rather more conversion; the loader has to lie so that he can feed ammunition belts into the gun, but at the same time his legs must curl round behind it to provide a backrest for the gunner, who in turn has to lie on his back, or recline on the left of the gun. Various figures can be used for these, but those shown are, loader: top half of wounded rifleman, lower half of officer waving pistol; gunner: top half of same officer, with arm positions altered, and bottom half of lying rifleman.

The pioneers can be shown as a mine-clearing team. A full platoon would have had some 20 men, but a small team can be made up with four, as follows; the crawling officer with his pistol removed 'recces' the ground in front. He is followed by the tape-man marking one edge of the swept area; with a piece of white-painted 1/8in dowel glued under his pack and a piece of white cotton glued to it trailing along the ground behind him. Working alongside him is the detector operator. He is provided in the 8th Army set, but can be somewhat improved by the addition of a larger plate at the bottom of his mine detector, and by inking in ear-phones and cables. The two remaining fig-

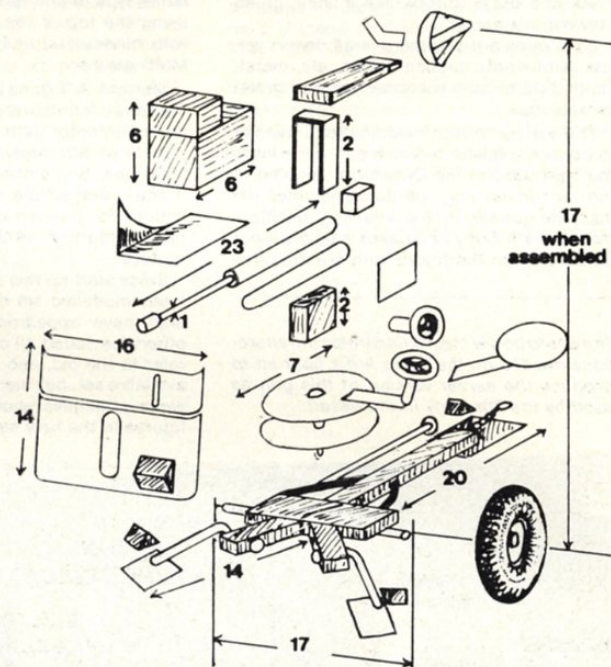


Top of page Vickers medium machine-guns with tripod in the high position (left) and low position (right).

Above pioneer platoon working as a mine-clearing team.

Right assembly sketch for 2pdr anti-tank gun; all dimensions in millimetres.

Foot of page alterations needed to produce a mine-clearing pioneer team. A mine detector. B tape roll slung under pack. C mine marker cone. D bayonet.

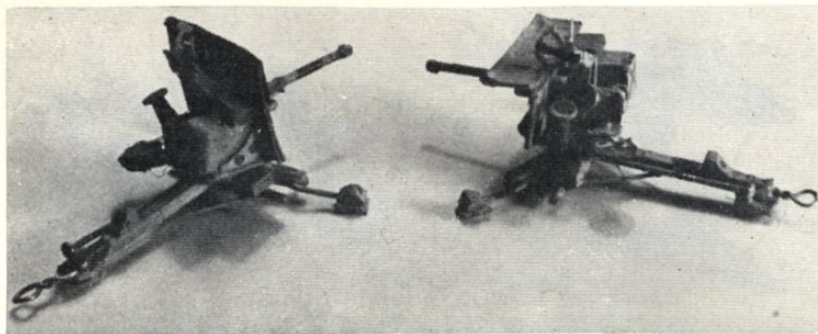


ures are crawling rifleman, with weapons cut away, and a mine marking cone of wood and a bristle bayonet added. A larger party

can be made on the same lines as shown on page 390 of *Airfix Magazine*, March 1974.

The anti-tank platoon would have had eight guns, and for these we can either scratch-build 2 pdrs of the type in general use until mid-1942, and longer in many units, or we can adapt the Airfix 6-pdr kit. The gun detachments would have been three men for the 2 pdr and four for the 6 pdr, but again we have cut these down to two each for wargame army purposes.

The 2 pdr can be built as shown in the sketch. It can be made with the top of the gunshield either in the up or down posi-



tion, and if the front legs are made to hinge as shown, and a stiff wire axle is used, it can be put on wheels or emplaced as required. The barrel is from plastic rod; the shield, seat, handwheels, sights, etc, are card; the breech block, ammo box and trail are balsa, and the front legs are pins. Minitank jeep wheels are used.

The 2 pdr gunlayer is made from the top half of the 8th Army figure with his rifle at the high port, and the lower half of a crawling rifleman. The loader is an unaltered MMG gunner with a pin, suitably painted in black and brass to look like a shell, glued between his hands.

Both guns are painted overall desert yellow, with sights, breech blocks, etc, metallic, or 2 pdrs can be overpainted with green camouflage.

The various minor modifications needed to convert the later model 6 pdr in the kit to the type used in the Desert are detailed in the accompanying photo. The medium machine-gunner in the kneeling position, from the 8th Army kit, makes a better 6-pdr gunlayer than the figure with outstretched

Two 2pdr anti-tank guns with wheels removed and legs spread as normally emplaced for action. Note that the gun on the right has its shield lowered.

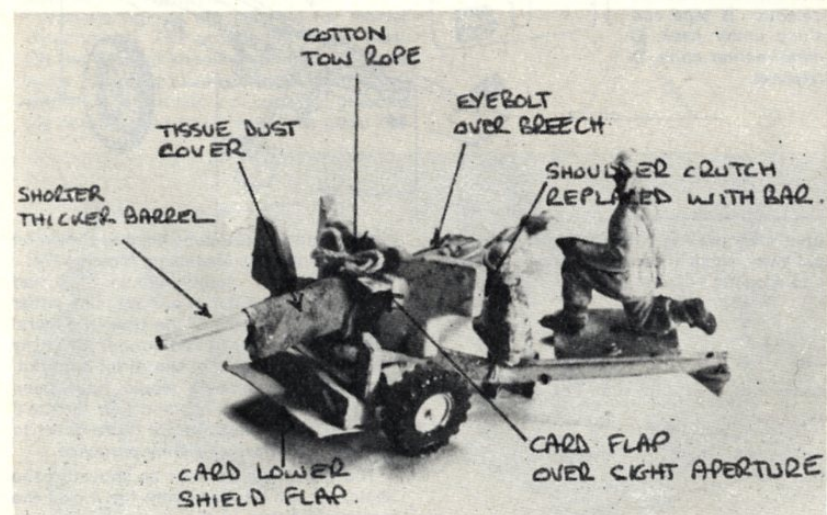
arm that is provided, but the loader is okay as he is. A suitable command figure for either type of anti-tank gun can be made by using the top of the 8th Army lying figure with binoculars, and the bottom 2/3 of the MMG gunner.

Mortars, A/T guns and MMGs could all of course be found in motor infantry, as well as lorried infantry battalions, as described in part 3 of 8th Army in the Desert (*Airfix Magazine*, September 1973).

The next article will describe modifications for the carrier platoon, and how to make infantry vehicles, including A/T portees.

Since starting this series a new, and more finely modelled set of 8th Army 00/HO figures have appeared from Airfix. Unless otherwise stated all conversions mentioned refer to the old, and currently more readily available set, but there is no reason why the same principles should not be applied to figures in the new set if desired. □

The photo below clearly illustrates the alterations needed on the basic Airfix 6pdr kit to produce the earlier version of this gun as used by the 8th Army in the desert.



THE ROYAL Flying Corps, as its very name implies, was a Corps, or arm, of the British Army and 'Royal' by virtue of its birth from the Air Battalion, Royal Engineers on May 13 1912.

Its role was envisaged as an extension to the cavalry's scouting function and as an aid to the artillery observation officer. These were the prime roles of the Corps and to that end the light single-seat aircraft were called Scouts, and two-seat aircraft carried not Pilot and Gunner (as later became necessary) but Pilot and Observer.

These two aircrew categories were distinguished by badges on the left breast, the pilot by wings with RFC in the centre and the observer by a single winged 'O'. The uniform was of standard British Army khaki, but styled with a single-breasted tunic, cavalry trousers and puttees.

The BE2 series, later criticised as 'Fokker fodder', were selected on their merit of being inherently stable and so providing a stable observation platform, but until standardisation was achieved a variety of types were used.

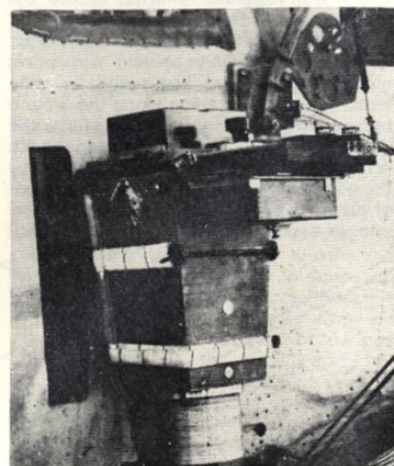
Officers of the period were trained to sketch and write reports on message pads and when war came in August 1914, and four RFC squadrons moved to France, the aircrews operated in just this way.

Their efforts were recognised early in the First World War by the Commander-in-Chief of the British Expeditionary Force, Sir John French, in his first despatch from the Field, September 7 1914:

'I wish particularly to bring to your Lordship's notice the admirable work done by the Royal Flying Corps under Sir David Henderson. Their skill, energy and perseverance have been beyond all praise. They have furnished me with the most complete and accurate information which has been of incalculable value in the conduct of operations. Fired at constantly both by friend and foe, and not hesitating to fly in every kind of weather, they have remained undaunted throughout.'

It was this firing by friend and foe that led

Before the needs of streamlining became paramount, cameras became external appendages as illustrated.



AIRFIX magazine



Part 1 — prime role of the air arm

to the adoption of national markings as related in the earlier *Bombing Colours* and *Fighting Colours* series in this magazine.

Similarly, the BE2 series markings were covered on the bomber series. This new series, dealing with air-ground co-operation, will detail the aircraft appendages used in co-operation, the visual signalling systems ground and air and particularly the markings of aircraft in the Corps Squadrons, as the army co-operation squadrons were known in the First World War, and subsequently.

With camera and transmitter

Sophistication came in two ways, the camera to record more accurately what precisely could be seen, and wireless signals to speed communications so that fall of shot of the artillery could be reported immediately for corrections to be made.

The first standard cameras were handheld, but later models of the early war years were fixed to fuselage sides in such a manner that observers could effect plate changes. From May 1915, some BE2cs in

the Field had a trap-door made for camera installations.

Experiments in air photography had been conducted before the war and during the Battle of the Aisne, on September 15 1914, the first five plates were taken of enemy positions. After trench warfare set in during the winter, trench maps were made from aerial photography and by the end of 1915 the whole of the German Front had been photographed in detail. Because of the air-flow drag imposed by external camera fittings, most aircraft had internal stowage for cameras by 1917.

To indicate fall of shot from the air, a system of firing coloured Very lights was tried in early attempts at artillery co-operation, a different colour for 'short', 'over', 'left' and 'right' being used. During the Battle of the Aisne, wireless-equipped aircraft were also first used operationally. These had W/T (Wireless Telegraphy) apparatus fitted in the observer's cockpit and by means of a morse tapper key, code messages could be sent to batteries.

The RFC in the Field by the end of 1914

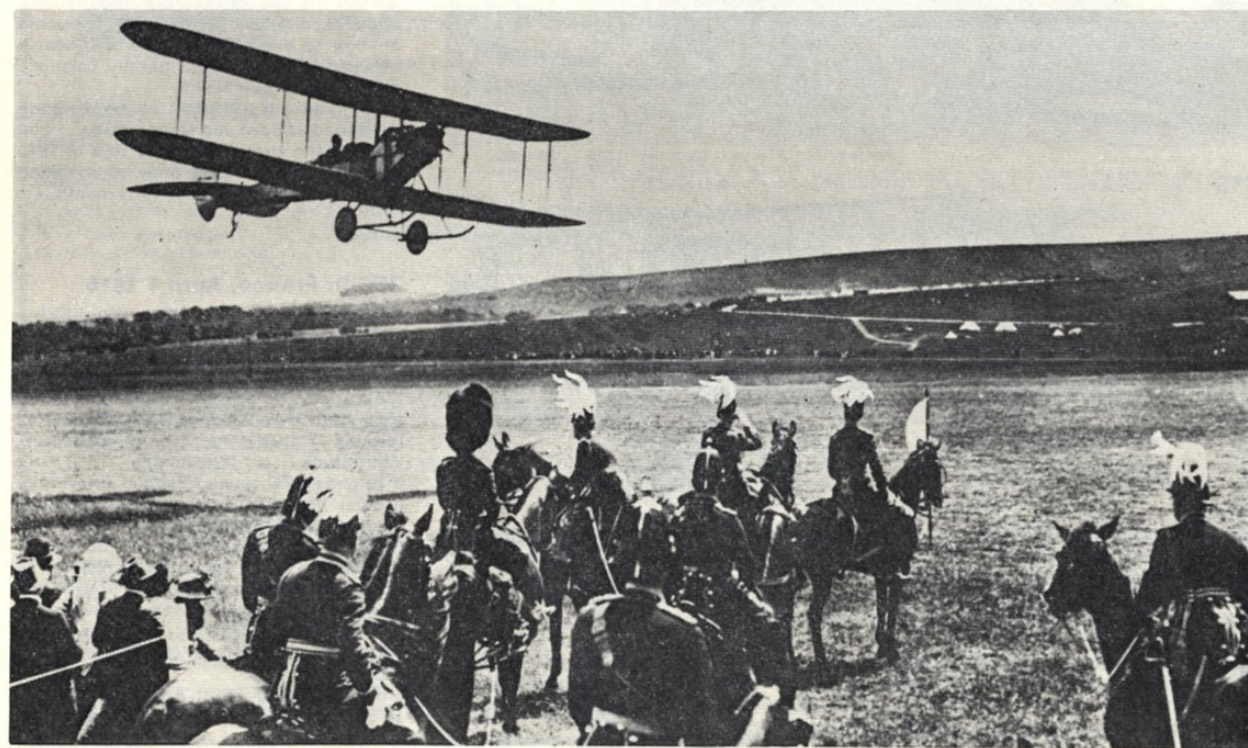
was organised into the 1st and 2nd Wings allotted to the First and Second Armies with squadrons detailed to serve Corps HQs. As the Expeditionary Force increased so did the number of squadrons increase in the field and in the spring of 1916 the field strength was as shown in the Order of Battle table.

Vehicle/aircraft co-operation

Apart from the Crossley tenders and Leyland 3-ton and workshop lorries that became standard RFC equipment, civilian lorries were supplied supplementary to help with squadron movements and were of great value during the retreat from Mons. These lorries were conspicuously marked with civilian slogans and names such as HP SAUCE and MARPLES.

The War Office, with great foresight, had seen the need for transport vehicles and were well aware that the Treasury would not sanction the expense on the scale needed. They therefore introduced a scheme whereby London traders and stores were paid a small sum towards maintaining their own vehicles, provided that in an emergency the War Office would have immediate and full claim upon them. As a result these commercial vehicles, in the same paint schemes as they plied the London streets, were shipped to France as RFC transport. They did not compromise concealment

Epitomising the envisaged role of aircraft as an extension of cavalry is this flypast during the 1914 King's Birthday Parade in the summer of 1914. A BE2 is seen flying past the saluting base with General Smith Dorian taking the salute.



December 1974

since German reconnaissance was sparse in the opening months of the war and in any case, gaily painted as they were, they would more likely to have been regarded as a circus on the move than a military unit! They did, however, provide a conspicuous and useful landmark to guide our own pilots to finding their own bases during the frequent

moves on the retreat from Mons.

Strangely, it was the Royal Naval Air Service that developed squadrons of armoured vehicles and deployed them in Northern France and Belgium early in the war. The force was known as Aeroplane Armoured Motor Support. When mobilised in September 1914 the armoured car strength,

organised into four squadrons, consisted of 35 Rolls-Royces (15 were armed with two Maxim guns each), 42 Wolseleys (21 fitted with twin Maxims) and 42 armoured Talbots (15 fitted with twin Maxims). These were supported by 22 Wolseley and 18 Talbot wagons, eight Wolseley and eight Talbot breakdown wagons, eight Wolseley ambulances and eight Talbot cars.

Unfortunately, the trench warfare which followed made the force redundant and it was dispersed. Nos 3 and 4 Squadrons were sent to the Dardanelles with the Maxim-armed Scott motorcycle combinations of the newly-formed No 10 Motor Cycle Machine-Gun Squadron, RNAS. Movement on Gallipoli was even more restricted than on the Western Front and the only effective action by these squadrons was dismounted, manning their Maxim guns from the fore-castle of the SS *River Clyde* to provide covering fire during the landings.

Air action in the Dardanelles campaign was mainly naval, with artillery spotting for ships by both aeroplanes and kite balloons. But in Mesopotamia the Royal Flying Corps were trying to use experience gained on the Western Front.

As F. Yeats-Brown wrote in the classic *Bengal Lancer*, 'No one knows I have never flown and that until yesterday I had not the foggiest idea about even the theory of artillery observation from the air. It is really quite simple, however. I am to fire red, blue and white Very lights to indicate "short", "over" and "range". The battery has strips of cloth to indicate the direction of the target, and the orders of the commander: thus L means "observe for line", X "observe for range", E "repeat last signal". I have learned the strength of Turkish battalions, brigades, divisions. I have been instructed on how to allow for mirages, distinguish between Arab and regular cavalry, calculate distance from gun flash.'

So, gradually, systems of co-operation were tried, proven and standardised — and so were the aircraft, with the RE8 in 1917 being the first standard army co-operation aircraft, as will be detailed next month.

RFC in France, April 1 1916

HQ RFC St Omer: No 12 Squadron (RE7s) and No 25 Squadron (FE2bs).

I Brigade RFC serving First Army. 1st (Corps) Wing: Nos 2, 10 and 16 Squadrons (BE2cs) plus No 3 Squadron (Morane Parasols). 10th (Army) Wing: No 18 Squadron (Vickers Fighter) and No 27 Squadron (Martinsyde Scout (Elephant)).

II Brigade RFC serving Second Army. 2nd (Corps) Wing: No 1 Squadron (Morane Parasols) plus Nos 5, 6 and 7 Squadrons (BE2cs). 11th (Army) Wing: No 20 Squadron (FE2bs) and No 29 Squadron (DH2s).

III Brigade RFC serving Third Army. 12th (Corps) Wing: Nos 8, 12 and 13 Squadrons (BE2cs). 13th (Army) Wing: No 11 Squadron (Vickers Fighters) and No 23 Squadron (FE2bs).

3rd Wing serving Fourth Army. Nos 4, 9 and 15 Squadrons (BE2cs) plus No 24 Squadron (DH2s).



Top instructions on maintaining the hand-held camera. This picture well shows the airman's khaki uniform of the period, of single-breasted tunic, side cap and puttees. The side cap with badge and two buttons could be unfolded down over the ears and buttoned under the chin. It will be seen that a simple RFC shoulder flash had been introduced to replace the full shoulder titles. **Centre** air-ground cooperation. A Rolls-Royce armoured car, C 259, brings in a wrecked Martinsyde Elephant that had been captured by the Turks in Mesopotamia who had obliterated British roundels and painted on their red square insignia, as seen on the rudder. **Bottom** when khaki-green finishes were introduced generally in 1916, the lightly varnished wooden strips of the camera holding frame, at the starboard side of the rear cockpit, often looked like a marking, as seen on this BE2c presentation aircraft 'Orissa States No 2.'



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 - 7 Officer forage cap, pointing
 - 8 Afrika Corps Infantryman advancing
 - 9 N.C.O. at ease
 - 10 Afrika Corps Infantryman arm raised
 - 11 Afrika Corps infantryman dispatch case
 - 12 Paratrooper at ease
 - 13 Paratrooper throwing grenade
 - 20 Paratrooper grenade stance
 - 21 Afrika Corps Infantryman shorts
 - 22 Afrika Corps NCO arm raised
 - 23 NCO Paratrooper kneeling with small arms
 - 24 Afrika Corps Infantryman adv with brief case
 - 25 Officer peaked cap binoculars
 - 26 Paratrooper with chute
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Hawker Siddeley HS 1182 Hawk in 1:72 scale

Challenging scratch-building project described by **Peter Marsh**

WE'VE HAD Mohawks, Tomahawks, Kittyhawks and what were those birds called that we erks used to wear on our shoulders? But in its 56 years of existence there seems considerable doubt as to whether the RAF has ever had a plain straightforward Hawk — even Hawker Siddeley don't know, and that, in a business where men have consistently emulated the bird of prey is, I suppose, remarkable.

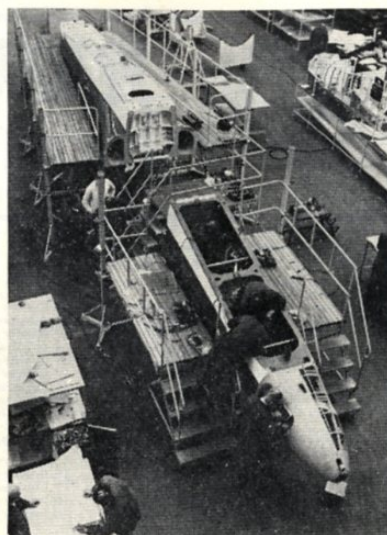
In 1974 Hawker Siddeley will rectify this deficiency with a trainer bearing this name. Remarkable also in that it was designed as a trainer from the start with combat potential, reversing the Hunter/Gnat trend and remarkable in being all-British at a time when the international consortium seems fashionable.

It is difficult to dissociate the Hawk from the Sepecat Jaguar. Two dissimilar aircraft yet undoubtedly the development of one has influenced the creation of the other. The original Memorandum of Understanding signed by Britain and France in 1965 on the Jaguar envisaged an aircraft based on the Breguet Br 121. Of the 300 aircraft originally foreseen, the British share

was to be 150 trainers. These were to replace the Gnats and Hunters of Training Command.

As the Jaguar developed, so the order book went through a gradual metamorphosis. The next stage was 100 trainers and 100 of the single-seat strike variant. Advanced avionics gave it better target location and weapon delivery than any comparable European aircraft, so it was inevitable that the order would change to nine squadrons of the strike fighter and

Above right the first HS 1182 Hawk on the Kingston assembly line shortly before mating of the forward and centre/rear sections of the fuselage. **Below** author's model in offensive configuration with two 1,000 lb bombs and ram-air turbine retracted. **Bottom** the prototype Hawk, XX154, during its 53-minute maiden flight from HSA's flight test centre at Dunsfold, Surrey, on August 21 (Hawker Siddeley).



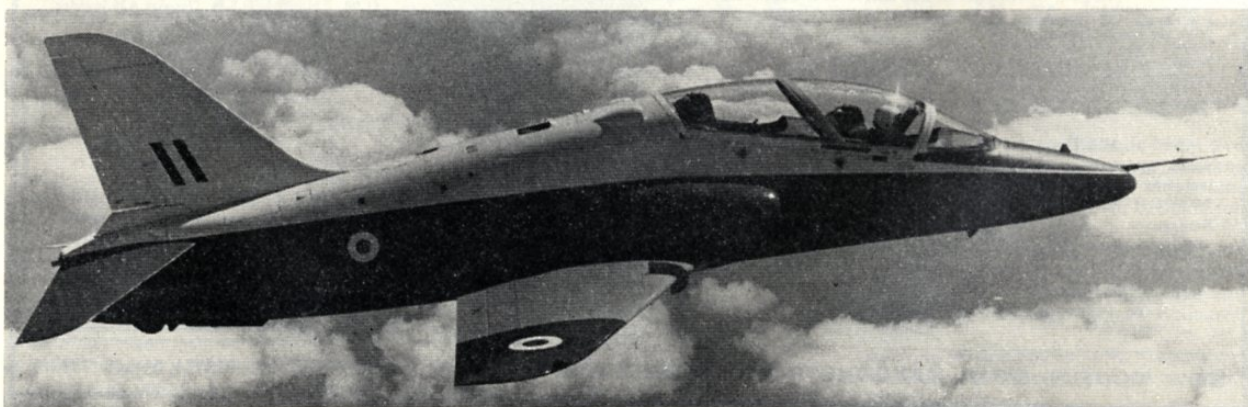
sufficient two-seaters for OCU and squadron use.

This, while solving one problem, raised another. There were still Gnats and Hunters performing valiantly but still with no sign of eventual replacement.

The success of the BAC Strikemaster — a warlike version of the Jet Provost — showed that there was a considerable market for that kind of aircraft. Three similar designs — the BAC P.59, the Franco-German Alpha-jet and the HS 1182 — were a logical step forward. All three featured appeal to sophisticated air forces as advanced flying and weapons trainers, compatible in many ways with Phantom, Buccaneer and MRCA-type combat aircraft. A lucrative alternative was the appeal to less advanced air forces as a multi-role strike aircraft with a formidable built-in weapons capability and a performance not unlike that of the much sought-after Hunter.

At Farnborough 1970, there appeared on the Hawker-Siddeley stand models of this new 1182 trainer. Single-engined, with shoulder intakes, moderately swept wings and tail unit, large canopy with tandem seating, it incorporated known Air Force prefer-

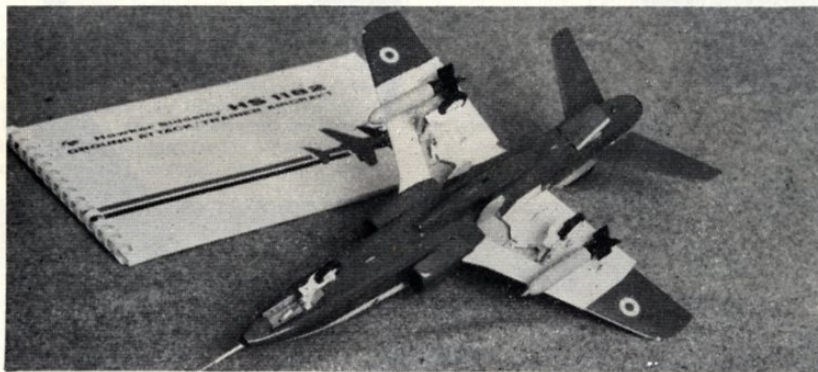
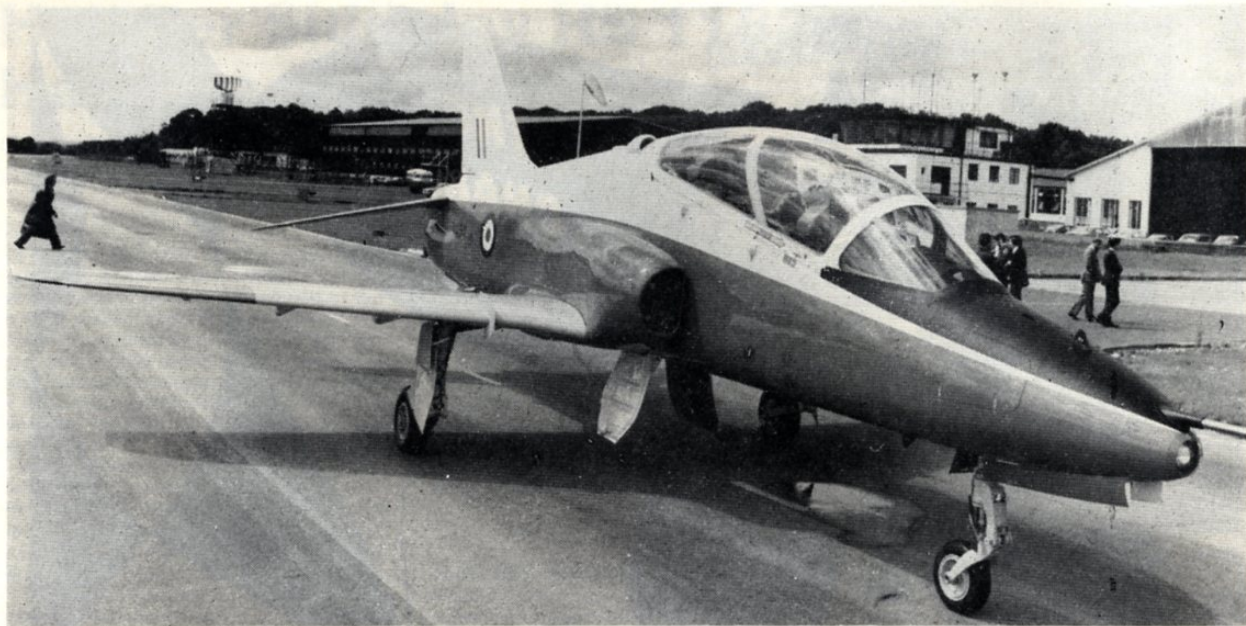
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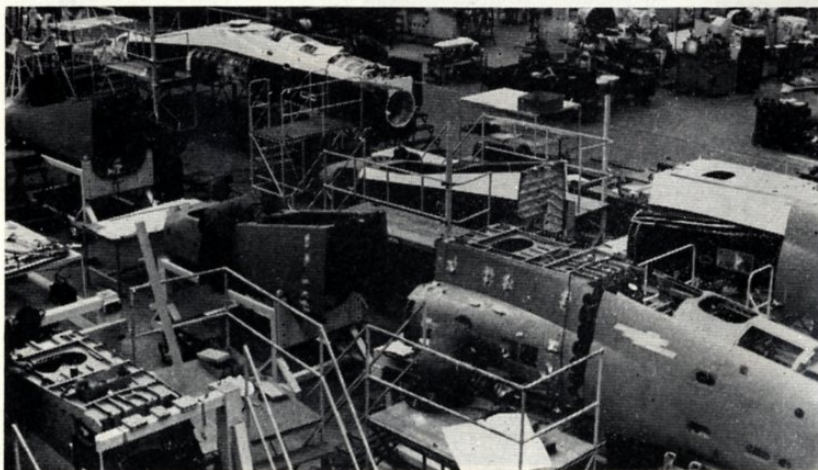
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Top the prototype Hawk getting its first public airing on August 12 at Dunsfold (MoD). Above underside view of model showing large gun-pack, wheel bays and air brake extended. Below the completed fuselage section of the Hawk Space Model (upper left), the forward and centre/rear sections of the first aircraft (upper centre) and the three separate sections of the static test model in February this year (Hawker Siddeley).



Continued from page 226

ences, yet no official requirement for such an aircraft existed.

When, therefore, on March 21 1972, a contract was signed for 175 production and one pre-production sample of the 1182, the design had developed considerably from the speculative models of 1970. Such was the confidence felt in this state-of-the-art trainer that no prototype as such was deemed to be necessary.

The Hawk, as it became known later, was to be the first all-British metric aircraft, although powered by the bi-national Rolls-Royce Turbomeca Adour 06-11 possessing approximately 95 per cent commonality with the afterburning turbofan of the Jaguar, of course.

The Government clearly felt that, while it made good sense to develop advanced types like Concorde, Jaguar and MRCA in collaboration with European partners, considerable economies could be achieved by developing our own trainer. This ruled out joining the Alphajet consortium and led to a straight choice between the P.59 and the HS 1182. The Hawk was selected, providing stability at Kingston where a gap was threatening between current Harrier orders and the emergence of the Advanced Harrier.

In service with the RAF, the Hawk will be at the top end of a training scheme involving the Bulldog and Jet Provost. It will generally be flown clean, using only the inboard pylons and gunpod for weapons training. Export versions will have five hard points giving a maximum offensive load of 5,000 lb.

I was drawn to the Hawk by its neat, attractive airframe and also by its simplicity, as I wanted to use it as a non-flying test-bed for some new techniques in plastic card modelling.

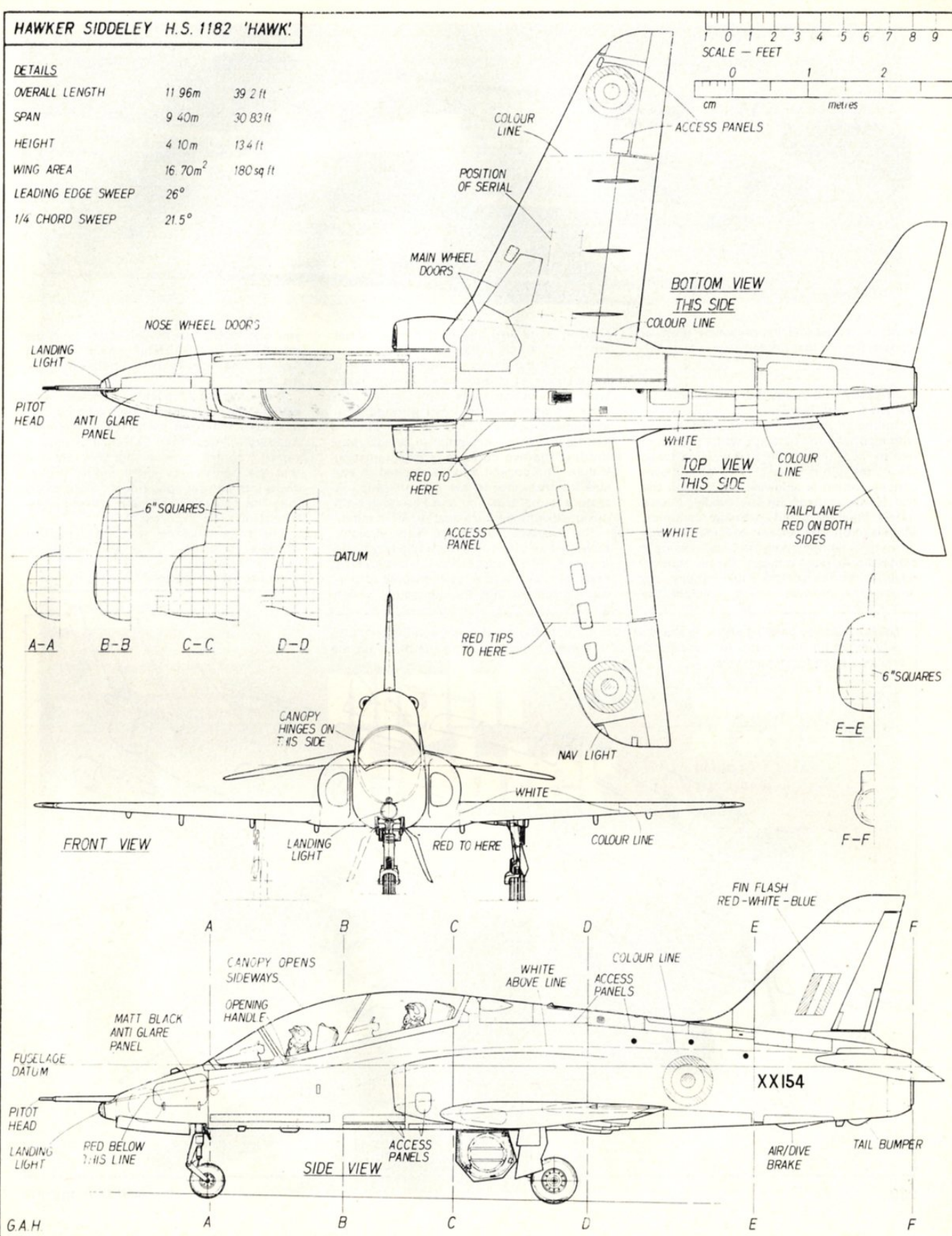
Since my last complete airframe (MRCA, *Airfix Magazine*, July 1973), plastic card

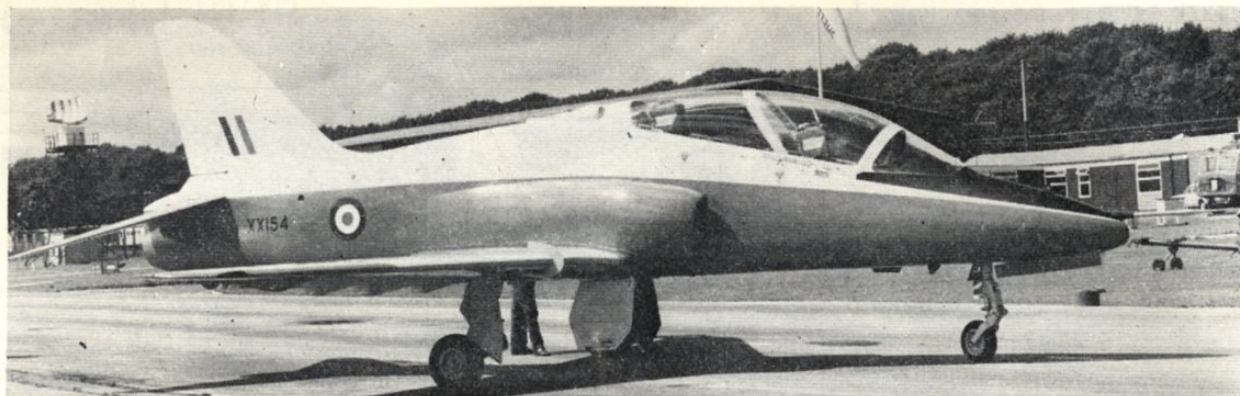
AIRFIX magazine

HAWKER SIDDELEY H.S. 1182 'HAWK'

DETAILS

OVERALL LENGTH	11.96m	39.2ft
SPAN	9.40m	30.83ft
HEIGHT	4.10m	13.4ft
WING AREA	16.70m ²	180sq ft
LEADING EDGE SWEEP	26°	
1/4 CHORD SWEEP	21.5°	





Another view of the first prototype Hawk at Dunsfold in August (MoD).

from 80 to 120 thou has become available. I wanted to sample them.

Uniting an acetate sheet moulded canopy with a polystyrene fuselage was a problem I had to face. Unless genuine welding takes place, any join is suspect. The large blown canopy, which is sideways-hinging on the real Hawk, is fixed on the model. I have mixed feelings about opening canopies. Models often look better with undercarriage down and canopy open, yet I find closing it satisfactorily most difficult. On my Hawk, I have slotted the acetate sheet canopy into polystyrene grooves which simulate the

framing quite well and hold it over its full length very firmly without adhesive.

The size and clarity of the canopy give a lot of scope for interior detail. Martin-Baker type 10B ejection seats dominate the two cockpits which can be fitted with identical instrument panels, rudder pedals, consols and gun-sights. An interior windscreen dividing the two cockpits is an interesting feature. The cockpit floor is stepped to enable the instructor to see over the pupil, a feature found in Jaguar and Phantom, both designed with the back-seat driver in mind.

The fuselage itself is a fairly straightforward box structure which needs a bit of ingenuity in the area of the intakes and the wing join. I went to a lot of trouble to produce a turbine face for the Adour, which

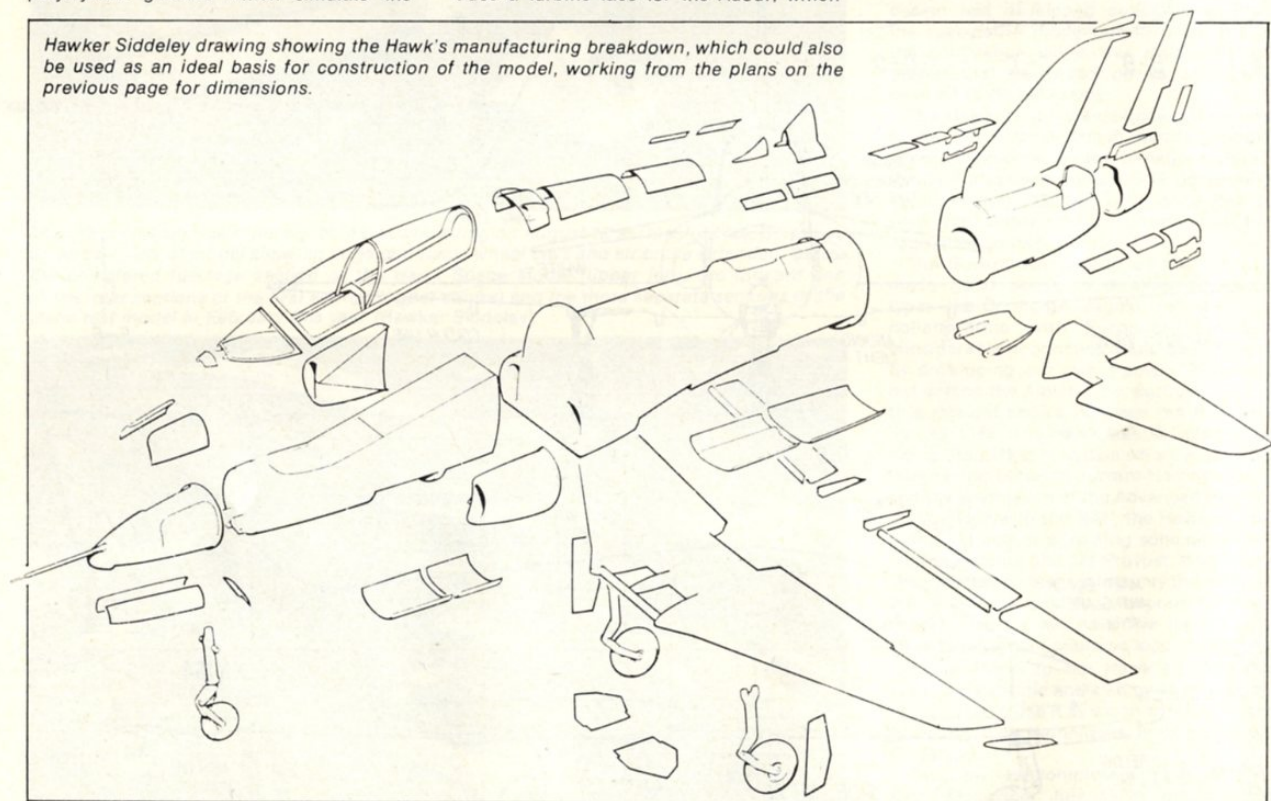
you can hardly see as you look down the intake. Do we omit detail which we can't see, or does it make us feel better to know it's there?

The wings are a top and bottom sandwich with trailing edge flaps pivoted inboard. The ailerons I left fixed for airframe strength. Readers will have their own opinions about working control surfaces but they will find that the polystyrene sheet model breaks down into natural components more easily than the equivalent kit, and consequently tempts one into excesses.

The flying tailplane, which has marked anhedral, is pivoted on a short length of

Continued on page 232

Hawker Siddeley drawing showing the Hawk's manufacturing breakdown, which could also be used as an ideal basis for construction of the model, working from the plans on the previous page for dimensions.



"my thing's bent"

With the coming of winter in 1940, so too came the second phase of the Luftwaffe's offensive against Britain – the night bombing of her cities. At first, the raiders had things pretty much their own way – losing, for instance, just 3 bombers in January '41 and 4 in February. But this immunity was not to last – thanks, in part, to the night-fighting Bristol Beaufighter.

Sleek, fast and rugged, the Beaufighter was a cannon-armed development of the basic Beaufort design. But, cannon or not, the most formidable weapon in its armoury was an unpredictable box of tricks which often brought the cry "My thing's bent!" from exasperated operators: the A.I. – Air Interception set.

At this stage of the war A.I. system which was the earliest application of airborne radar was hardly a more viable proposition than many other night-fighting concepts – such as airborne searchlights, magnesium flares and minifields dangling by balloons! But slowly progress was made.

first kill to 604 Squadron

By the time they received their first Beaufighters late in 1940, one of the night-fighter squadrons, 604, based at Middle Wallop, had flown dozens of

tests and sorties in A.I. equipped Blenheims. With little success. Apart from the unreliability of the sets, the Blenheims themselves were too slow and clumsy.



Then the Beaufighter met up with the frustrated but well-practised crews. And soon success followed... On the night of 20th November 1940, F/Lt John Cunningham and F/Sgt J. Phillipson were vectored in on a Ju88 – and shot it down. The A.I. equipped Beaufighter was in business!

the Cats Eyes myth

From this first night "kill" grew a myth which Cunningham and his colleagues loathed. The public knew nothing of the A.I. set – censors even doctored

Beaufighter photographs! – and continued secrecy was vital. So John Cunningham was introduced to the public as a pilot with miraculous night-vision – hence the legendary "Cat's Eyes Cunningham!"

In January 1941, improved ground control was introduced – and the number of "kills" rose. In March there were 22, in April 48 – and in May a staggering 96. And the Night Battle of Britain was virtually at an end.

Night-fighting was just one of the spheres in which the Beaufighter proved a success. It later made day and night intruder raids, ground-strafed in North Africa and Italy, carried rockets and torpedoes. And in the Far East the Japanese called it the "Whispering Death" because of its silent, low-level approach.



F/Lt John Cunningham

showing the flag!

In June 1942, a 236 Sqn. Beaufighter IC flew to Paris by day, dropped a tricolore on the Arc de Triomphe and attacked the Gestapo headquarters with cannon fire!

other reading for enthusiasts

"Profile No. 137" by Philip J. R. Moyes. Profile Publications "Night Fighter" by C. F. Rawn-sley and Robert Wright. Collins/Corgi.

■ Revell's super-detailed 1/32nd scale Bristol Beaufighter Mk. 1F is an accurate replica of the aircraft flown by John Cunningham during night-fighting operations in 1941.

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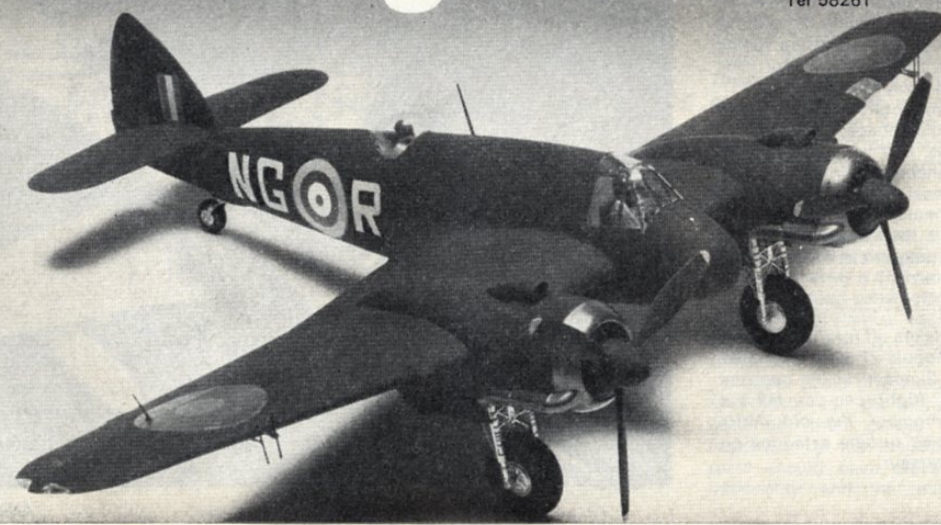
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Continued from page 230

stem. The fin is made of two thicknesses of 60 thou plastic card, making it possible to shroud the rudder. An airbrake is fitted, Hunter-style, under the rear fuselage.

The undercarriage, which is of the levered-suspension type, presents a few strength problems and also one of balance. The Hawk just balances on three wheels without extra weight in the nose. As plastic card models tend to be heavier than the equivalent injection moulded kits, it comes as a relief not to have to add extra weight. Heavy models carry the seeds of their own destruction.

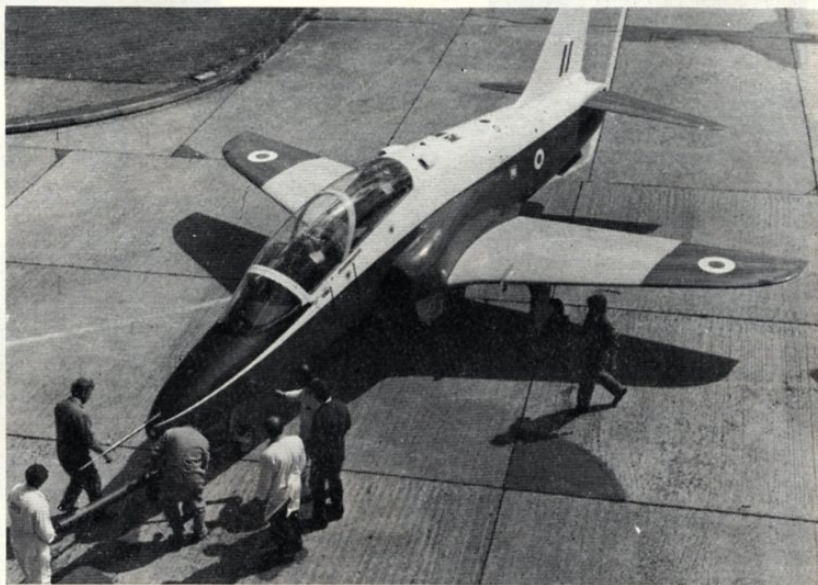
I fitted an emergency ram-air turbine (retractable), which in simple terms is a small propeller whose job it is to produce hydraulic power in an emergency. In practice it has proved a sore temptation to those with well-developed lungs!

By using simple sandwich methods, I have persuaded the wing pylons to carry a variety of loads which simply clip into place. The photographs show the Hawk in both ferry and offensive configurations.

The fuel tanks and gun pack were plastic card mouldings — the tanks being formed from two identical halves using a similar technique to that which produced the canopy. Polystyrene sheet moulds reasonably well under heat, having a slightly higher failure rate and a less sharp result than acetate sheet. I allowed a bit for rubbing down and got away with it.

The real thrill of the scratch-builder is that of creating a unique shape. The feeling, probably erroneous, that yours is the only model of this advanced design or that new mark, is hard to beat. I build kits, deeply admire the mould makers, modify kits, borrow ideas from kits then make one of my own. This is a learning circle which seems to have good results. □

Top the prototype takes off for the first time at 1918 hours on August 21 1974 with chief test pilot Duncan Simpson at the controls (Hawker Siddeley). **Right** 'can you tell the difference' — remember the old Airfix adverts? Note ram-air turbine extended on this model 'ferry' version.



George Gush

renaissance warfare

Part 19 — the Dutch army

THE DUTCH ARMY was born with the nation, in 1568, when the Netherlands started upon their long war of independence against Spain. War was continuous to the Twelve Years' Truce of 1609, and was then once more renewed during the Thirty Years' War period.

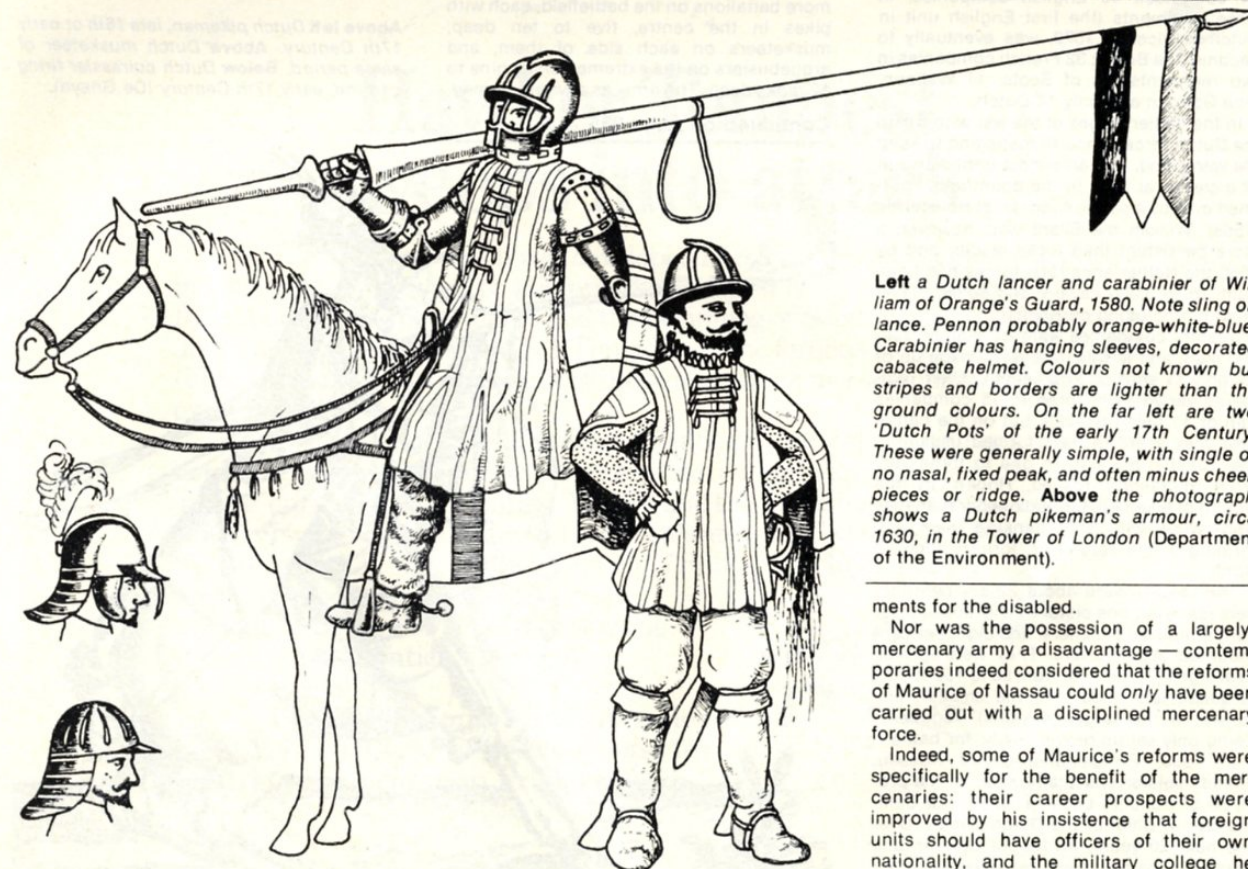
Throughout, the survival of the United Provinces depended upon the efficiency of their army against the veteran troops of Europe's greatest military power, so it is not surprising to find the Dutch forces taking the lead in 16th Century tactical developments.

Relatively few Dutch troops could be raised; the population was not large, and their efforts were directed more to the sea than the land, though there were always several native Dutch units, and the vital role of town defence to a considerable extent

depended on the bravery of local burgher militia (including in the early days such picturesque units as the ferocious corps of women, armed with sword, dagger and firearm, raised by widow Kenau Hasselaer to help defend Haarlem in 1572).

Thus, from the first, the Dutch army was made up largely of foreigners; all of them paid by the States, they included 'pure' mercenaries, official aid sent from England, and 'Gentlemen of the Religion' — Protestants from all over Europe, who fought for their faith as well as cash.

Experienced mercenaries considered the Dutch to be Europe's best employers, since they were not only fairly generous with pay, but offered regular year-round employment (unlike, for example, the Poles, who paid very well, but for the campaigning season only), and even some pension arrange-



Left a Dutch lancer and carabinier of William of Orange's Guard, 1580. Note sling on lance. Pennon probably orange-white-blue. Carabinier has hanging sleeves, decorated cabacete helmet. Colours not known but stripes and borders are lighter than the ground colours. On the far left are two 'Dutch Pots' of the early 17th Century. These were generally simple, with single or no nasal, fixed peak, and often minus cheek pieces or ridge. **Above** the photograph shows a Dutch pikeman's armour, circa 1630, in the Tower of London (Department of the Environment).

ments for the disabled.

Nor was the possession of a largely-mercenary army a disadvantage — contemporaries indeed considered that the reforms of Maurice of Nassau could only have been carried out with a disciplined mercenary force.

Indeed, some of Maurice's reforms were specifically for the benefit of the mercenaries: their career prospects were improved by his insistence that foreign units should have officers of their own nationality, and the military college he



founded at Breda was open to foreign-born as well as Dutch officers. In 1609, the infantry comprised 43 English companies, in three Regiments (the first English unit in Dutch service, in 1572, was eventually to become The Buffs); 32 French companies in two regiments; 20 of Scots, 11 Walloon, nine German and only 17 Dutch.

In the earlier stages of the war with Spain the Dutch forces, though managing to keep the war going, had an almost unbroken run of disaster, at least in the open field, lightened only by a single success, at Heiligerlee (1568). William the Silent was, however, a more persistent than lucky leader, and by 1580 the Netherlands total forces had been built up to 3,000 cavalry and some 28,000 infantry (including garrisons).

Infantry companies were of, mainly, 150-200 men, and at this date were made up of roughly $\frac{2}{3}$ shot to $\frac{1}{3}$ pikemen. Their regiments varied from three to 15 companies (ten or 11 being typical), but on the battlefield they seem to have formed usually in the Spanish manner, in one to three very large 'battalions' (called 'Hopen' by the Dutch) of pikemen, formed deeper than they were wide, with shot flanking them and forming a thin screen or 'forlorn hope' in front.

The cavalry were about 22 per cent lancers (carrying one pistol by the '90s), 70 per cent armoured pistoliers, and eight per cent mounted arquebusiers. They were formed in ensigns ('Vanen') of from 50 to 150 strong (arquebusiers usually in the smaller, pistoliers in the larger ensigns), regiments being only set up provisionally, for battle.

In 1590, Prince Maurice of Nassau, already soldier and Stadtholder of the province of Holland, became, at 23, the Commander in Chief of the Dutch armies. Over the next 20 years, he fought Spinola and Farnese, Spain's finest generals, and their

veteran tercios, to a standstill; commanded at 29 sieges and two full-scale battles, all successes; and effectively secured the independence of his country.

He also drastically reformed the Dutch army, and provided a tactical model for most of the armies (at least of Protestant powers) of the 17th Century. His associate in these reforms, incidentally, was his cousin William Louis, whose use of lead soldiers must give him a fair claim to be the first wargamer.

Like many military thinkers of the period, from Machiavelli onwards, Maurice was inspired by ancient works such as those of Vegetius and Leo; indeed, his enthusiasm seems at first to have been somewhat uncritical, extending to ordering his officers to learn Latin, and kitting out an experimental company Roman fashion, some with greaves, rectangular shield and sword, others with pike and buckler!

More practical classical borrowings included the standardised layout of the camps in which his army spent the summer, neat company-streets with officers' tents at the end surrounding the train and the tall tent of the commander, also the regular drill and training, including mock-battles.

Most important, however, was the new 'battalion', the basic infantry battlefield unit, reduced from several thousands to, officially, 550 (taken from the Roman cohort). Regiments would now form, usually, two or more battalions on the battlefield, each with pikes in the centre, five to ten deep, musketeers on each side of them, and arquebusiers on the extreme flanks, nine to 12 ranks deep. The army as a whole formed,



Above left Dutch pikeman, late 16th or early 17th Century. Above Dutch musketeer of same period. Below Dutch cuirassier firing carbine, early 17th Century (De Gheyn).



Continued on page 236

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Hawker Tempest sweeps into attack

The Tempest which was developed from the Typhoon entered service in 1944. With a top speed of 438 mph the Tempest accounted for 638 V-1 flying bombs between June 13 and the beginning of September 1944. Illustrated above are Nicosia based MK VI Tempests of the famous No. 6 Squadron, R.A.F. (Flying Canopeners) turning out of the sun to attack in a search/interception exercise, Cyprus 1945.

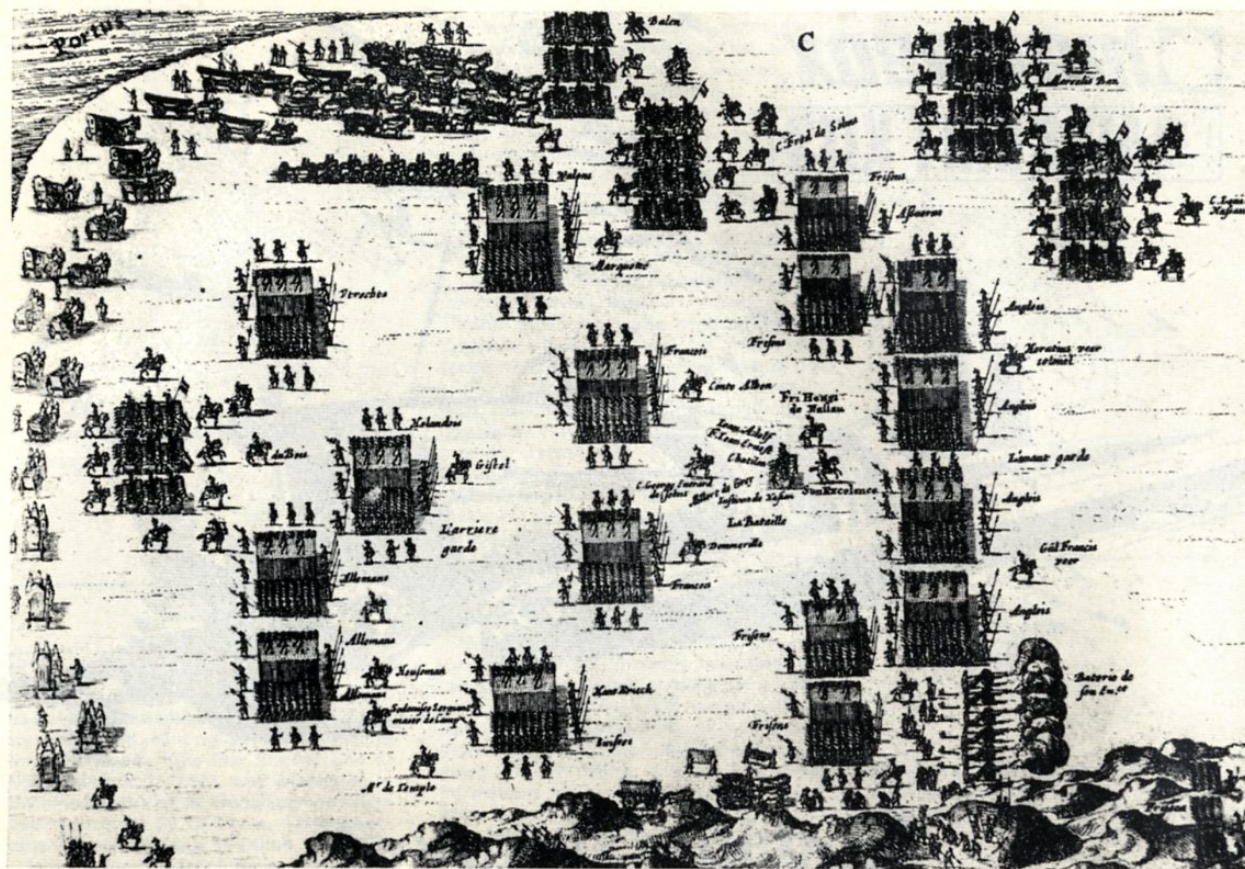
This highly detailed model is moulded in two colours and has numbered parts for easy reference. Two alternative parts are supplied to build the 'in line' engine for the Tempest MK VI and the radial engine for the Tempest MK II. Two colour plans and sets of decals are included—those of No. 6 Squadron R.A.F. Nicosia 1945, and No. 7 Squadron, Royal Indian Air Force, Poona, India, 1949. With or without paint the PK-26 Tempest is one of the most authentic 1-72nd scale models available.

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Continued from page 234

usually, three lines, with the battalions drawn up, as shown, in chequer-board fashion.

This network of small tactical units gave the Dutch far greater mobility and flexibility than their opponents, or indeed most contemporary armies.

Though the figure of 550 is usually given for the battalions, it appears in practice to have varied a great deal — in 1592, Maurice reviewed his army in battalions for the first time, their strengths varying from 750 to 1,030; Elton's diagram is for a battalion of at least 972.

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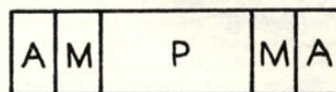


Diagram showing a Dutch 'Battalion' of 550 men in battle order. A = arquebusiers, M = musketeers and P = pikemen.

Maurice is said also to have reduced the size of companies, but these varied very widely in any case, though a strength of 113-120 seems to have become common in place of 150 earlier. Maurice is also held to have increased the proportion of pikes to shot (Michael Roberts suggests that the increase of pikes was necessary to stiffen the thinner infantry line). However, the two pikes to three shot ratio usual under him is similar to that of the companies of the 1580s listed, though certainly above the 1:2 ratio at the beginning of that decade.

Nor did Maurice standardise upon the musket, which does not seem to have become the sole infantry firearm until 1622, though as the lists show the proportion of muskets to arquebuses increased, and halberds, two-handers, etc, disappeared.

Maurice did order that equipment should be standardised: pikemen were to have 18-foot pikes, helmet, gorget, corselet and sword; about a quarter of them also wore armour from shoulders to elbow and large tassels. Musketeers and arquebusiers were supposed to have helmets and swords as well as their firearms, the lengths and calibres of which were also standardised (musket balls weighed ten or 12 to the pound, arquebus balls half this).

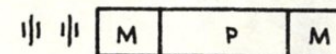
Maurice's most important change to the cavalry was the replacement of the lance by the pistol; the 11 ensigns of lancers in service in 1597 were all converted to pistol-

The army of Maurice of Nassau at Nieuport, 1600, in 'battalions'. Note the English regiments of the de Veres in the advance guard (by kind permission of the National Army Museum).

armed cuirassiers, along with three ensigns of arquebusiers. At the same time, the heavy cavalry squadrons had attached to them up to 81 boys on 'baggage-horses'. Servants rather than combatants, though usually armed with a pistol, these youths were mainly intended to relieve the cavalry and their expensive mounts from becoming exhausted or dispersed through the necessity of foraging (English cavalry of this period, in Ireland, had similar servants).

By 1606, the mounted arm, now given its own commander in Louis de Nassau, Lieutenant-General of the Cavalry, comprised some 40 ensigns, 2,853 Reiters and cuirassiers with pistols, 890 arquebusiers, 200 French lancers, and 350 Dragoons. These latter, mounted Dutch infantry, were a new experiment, and apparently not a successful one, since they re-mustered as arquebusiers by 1621.

Like the infantry, the cavalry included many mercenaries, particularly Germans, but also the French mentioned, the Scots ensigns of Erskine and Hamilton, and the English ones of Francis de Vere, Sir Robert Sidney, and Thomas Villier. Maurice, however, seems to have increased the number

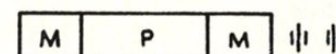
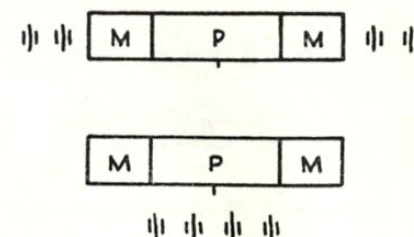


of native Dutch cuirassiers. He had also improved cavalry training, especially in the use of firearms (he employed formations at least five deep, using caracol tactics), and though the ensigns remained independent he grouped them in regiments of three or four on the battlefield.

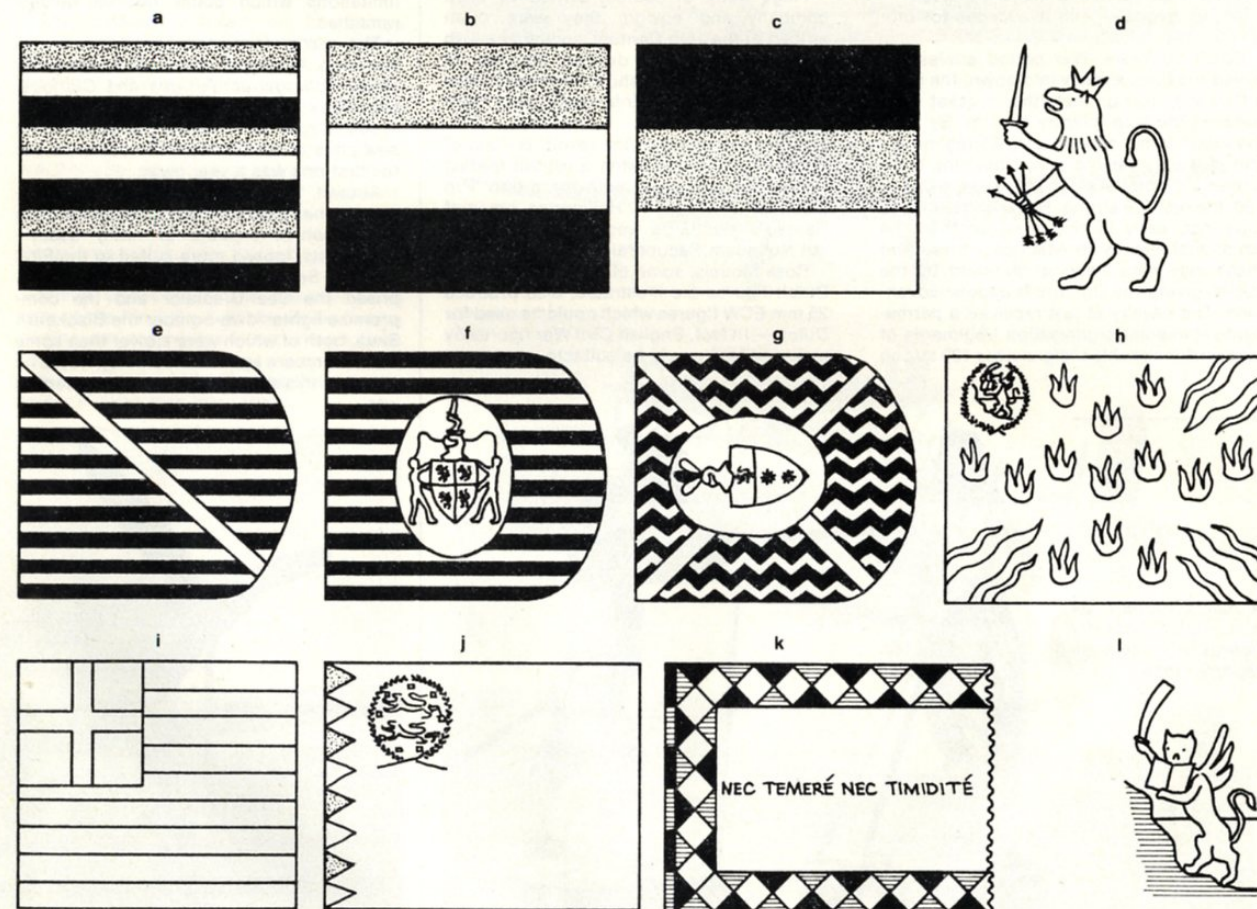
Standard equipment for the cuirassier was a helmet — referred to as a 'salade' but probably of the 'Dutch pot' type, at least in the 17th Century — gorget and corselet (all pistol-proof), shoulder armour, steel gauntlets and tassels from waist to knee, with two short (42-bore) pistols and a sword; horse to be at least 15 hands.

Mounted arquebusiers (also referred to as Carabineers and Bandeliers) wore casquet or pot, gorget and corselet, carbine slung on a shoulder-belt, one pistol, and sword. The great success of the cavalry was Turnhout, 1597, where they overthrew both lancers and pikes practically on their own.

Finally, artillery also was improved by Prince Maurice; it was a vital arm in view of the number of sieges the Dutch had to undertake. Again training was improved.



'A Brigade or Tertia, the Third Part of an Army, according to the Prince of Orange'. After Richard Elton's *The Compleat Body of the Art Military*, 1650. This shows a later development of Dutch practice: 'battalions' are only six deep, and are supported by light guns, both features indicating Swedish influence (M = musketeers, P = pikemen). Below Dutch flags. a, b and c are versions of the national tricolour, which was blue, white and orange in this period. d lion, appearing on some Dutch infantry standards; likely to be in natural colours, red or gold. e, f and g flags of Scots infantry, late 1570s or early 1580s. e has a slogan on the diagonal, the decipherable part of which runs '... D VIL DEFEND AN DAY. MAN- IEME...NO...' The arms on f are those of Thomas Newton — quarterly, first and fourth argent a lion rampant sable, second and third gules a lion argent. Crest an arm with a sword. The arms on g are those of Wemyss: gules, a lion rampant argent on a chief azure, two stars argent. Crest two white ostrich feathers, one red. Colours of stripes unknown. Another flag was like g but with stripes only. h flag of a company in Johan Ernst van Nassau's Regiment. Flag blue, 'flames' white or cream. i carried by Dutch infantry, 1591. I think this belongs to an English unit and that the canton is probably a red St George's cross on a white ground. j infantry company flag, 1621. Dark blue. Triangles orange and white, lions and wreath gold. k infantry company flag, 1621. Dark blue. Triangles red and yellow, diamonds white, lettering gold. Probably had border all round. l close-up of Venetian winged lion within wreath on h. 'Cliff' green, sea blue, lion brown, sword and bible white, surrounding wreath gold.



Dutch infantry companies

Date	1579	1587	1587	1596	1597
Officers	13	13	13	15	13
Musketeers	12	18	24	36	28
Arquebusiers	75	52	73	41	31
Pikemen	50	45	60	57	39
Two-handers	—	4	6	—	—
Halberds	—	12	18	—	—
Sword-and-buckler	—	3	3	—	—
Pages	—	3	3	2	2
Total	150	150	200	151	113

(The 'Officers' comprise Captain, standard-bearer, two sergeants, four corporals, two drummers, surgeon, provost and clerk.)

cannon were standardised (48, 24, 12 and 6-pounders) and the use of limbers (probably derived from the Spanish) increased their mobility. A siege train of about 1605, with six 48 and eight 24-pounders, had 316 horses in the teams (including spare spans), no less than 390 wagons, 30 cannoners and 300 matrosses (gunners' mates), 300 pioneers and a large body of technicians including a Petardier and a Master-Fire-worker.

All in all the Dutch army was not especially large, but as well as its new tactics, gained in that it was among the best-paid, best-trained and best-equipped of its day (in the equipment field two Maurician innovations were effective hand-grenades — used for sieges — and telescopes for officers).

Dutch 30 Years' War period armies followed the lines already laid down, the main difference being that the musket had become the sole infantry firearm. By 1635 the infantry had expanded to 35 regiments, still of widely varying size, from nine companies up; Colonel's companies were 200 or 150, the rest 120 strong. Some units seem to have had early flintlocks rather than the usual matchlocks in Maurice's time, and these may have become standard by the 1630s, giving the Dutch a firepower advantage. The cavalry at last received a permanent regimental organisation (regiments of four ensigns each); ensigns were 100 strong

on paper, and three-quarters of the 4,000 cavalry were cuirassiers with pistols, the rest arquebusiers.

Uniform, flags, etc

There was no general uniform, and it is likely that companies rather than regiments might wear coats of uniform colour. A probable exception is the Guards Regiment, which at least in the latter 17th Century wore blue. The line infantry in the later 17th Century wore grey, as did the original rebels against Spain, the 'Geux' or 'Beggars'. The national sign was an orange sash, though by the 1640s officers had taken to white sashes with coloured knots.

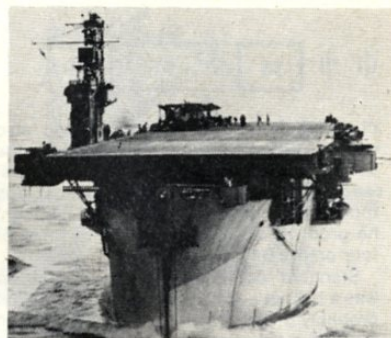
Flags were, of course, carried by each company and ensign; they were often striped in the 16th Century, sometimes with personal or national devices; the lion of Orange and Holland shown seems to have been much used, by infantry at least, from 1599 on.

In the early days of the revolt, William of Orange had flags showing a pelican feeding her young, and some with the motto 'Pro Lege, Rege, Grege'. At Heiligerlee, Louis of Nassau's standards were inscribed 'Nunc aut Nunquam Recuperare aut Mori'.

Rose Models, some of whose fine 54 mm Dutch figures are illustrated, also produce 25 mm ECW figures which could be used for Dutch — in fact, English Civil War figures by many makers would be suitable. □



A pair of superb 54 mm Dutch infantry figures from the Rose Models range.



The advent of the escort carrier was the step which cut down the convoy losses. HMS Battler, one of three in Operation 'Torch' (L. K. Lown).

WHEN A STATE of war came into being between Britain and Germany on September 3 1939 the Admiralty had had very little time in control of its Air Branch to repair the neglect of the past years and to build the sort of weapon it wanted. What time it had it had put to good use and already the Fleet Air Arm had accomplished an amazing amount of expansion in terms of personnel and air stations. But the offensive end of the Fleet Air Arm still had severe limitations which could not be quickly remedied.

The carrier force comprised one up-to-date ship, *Ark Royal*, three good, well-fitted ships, *Courageous*, *Furious* and *Glorious*, and three old and rather helpless ships, *Argus*, *Eagle* and *Hermes*. A magnificent new class of carrier had been designed but the first one was a year away.

Aircraft, too, were a problem. The mainstay of the Fleet was the Fairey Swordfish which, whilst capable of many accomplishments, looked more suited to the First than the Second World War. Fighters comprised the Sea Gladiator and the compromise fighter/dive-bomber the Blackburn Skua, both of which were slower than some of the bombers against which they would be pitted. In this state the Fleet Air Arm went to war.



AIRFIX magazine

The Fleet Air Arm in war and peace

Part 3 — into the Second World War, by John D. R. Rawlings

The obvious task for the carriers was to deal with the perennial threat to the UK, U-Boats. The three carriers in home waters went on anti-submarine patrol in the Western Approaches with unfortunate results. Within a fortnight *Courageous* had been lost to U-Boat attack and *Ark Royal* only escaped by the skin of her teeth, proving how vulnerable these ships were to the very ships they were seeking to destroy.

This experience was a setback to the anti-submarine war for the carriers were re-grouped into Hunter Groups with other warships, seeking out surface raiders, and this policy was not reversed for nearly two years. Only one of these Groups, Force K, in which *Ark Royal* participated, had any fortune, but other members of the Fleet Air Arm were in action. In fact *Ark Royal*'s Skuas shot down the first enemy aircraft in the Second World War, a Dornier Do18, into the North Sea.

The catapult aircraft on board the cruisers came into the limelight, too, during the *Admiral Graf Spee* incident in the South Atlantic, a Fairey Seafox from HMS *Ajax* spotting for the guns of the force attacking this pocket battleship.

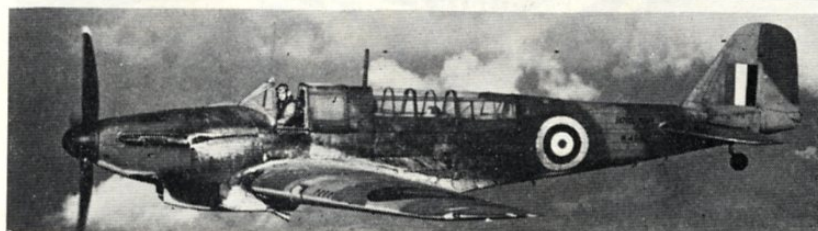
Elsewhere during the first months of the war Fleet Air Arm aircraft patrolled without incident and spent most of their time learning to cope with the rigours of winter flying in primitive conditions with few aids, experience which stood them in good stead when fighting arose.

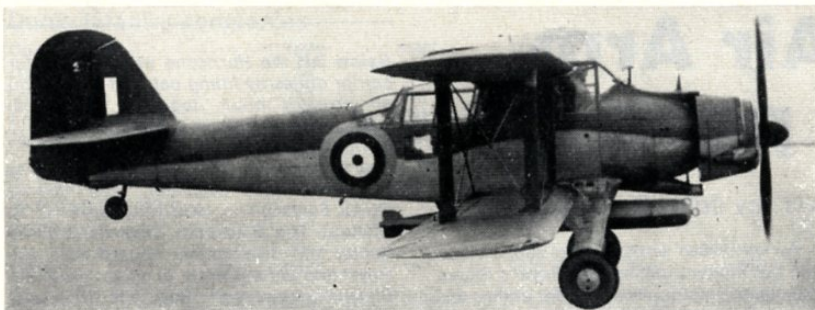
Whilst undoubtedly the most valuable task of the Fleet Air Arm should be in protecting our sea routes it has always been heavily involved offshore alongside land campaigns, and when the Norwegian episode arose they were there.

Furious sailed across to give support leaving her fighters behind. *Ark Royal*'s Skuas, ashore at Hatston, flew over for strikes and between them had some success, the Skuas sinking the cruiser *Konigsberg* at Bergen, while *Furious*'s Swordfish dropped torpedoes at ships in Trondheim.

It was important to establish a fighter base in Norway and so *Furious* and *Glorious* took two RAF fighter squadrons

Below left the Hurricane was adapted for carrier duties by fitting catapult points and an arrestor hook, together with local strengthening. This is a Sea Hurricane IIC so modified. Below, top to bottom standard fleet fighter at the beginning of the war was the Gloster Sea Gladiator, seen here at RNAS Eastleigh in 1939 (Captain P. C. S. Chilton). The Blackburn Skua doubled as fighter and dive-bomber aboard HMS *Ark Royal* and did not excel at either. From the Skua was evolved the Roc, with a four-gun turret. As a fleet fighter it was useless and reverted to training duties (The Aeroplane). First fleet fighter with eight guns was the Fairey Fulmar, developed from a bomber. It was too slow and unmanoeuvrable, but managed to deal with bombers, especially in the Med in 1941 (The Aeroplane).





across, No 46 with Hurricanes and 263 with Gladiators. FAA aircraft established a temporary base at Harstad from which a Walrus squadron operated and which the Skuas used as an advanced base. But the campaign collapsed and evacuation was the order of the day, an evacuation which resulted in the loss of HMS *Glorious* to the guns of *Scharnhorst* and *Gneisenau*. At this stage, it was realised, carriers were unable to defend themselves.

Up till now it had been said by the pundits that such aircraft as the Hurricane and Spitfire were far too potent to fly off carrier decks, and the ability with which 46 Squadron RAF had managed on and off *Glorious* without any training had come as a welcome surprise. But any thoughts of the FAA getting such precious machines, with the Battle of Britain in the offing, had to be put back for a year. The Fleet soldiered on with what it had in terms of aircraft; one fillip was the arrival in service in August 1940 of the carrier *Illustrious*.

This was the first of a new class of Fleet Carrier and had been built on the philosophy of being unsinkable; and so she and her sister ships were, sustaining the heaviest of damage but never going down and always returning to fight again, one of the class, *Victorious*, soldiering on to the mid-1960s. Certainly she was needed at this time for *Furious* was licking her wounds received in Norway, *Ark Royal* was with the Force H hunter group, *Eagle* was making for Alexandria to hold the fort in the Med and *Hermes* was in the South Atlantic.

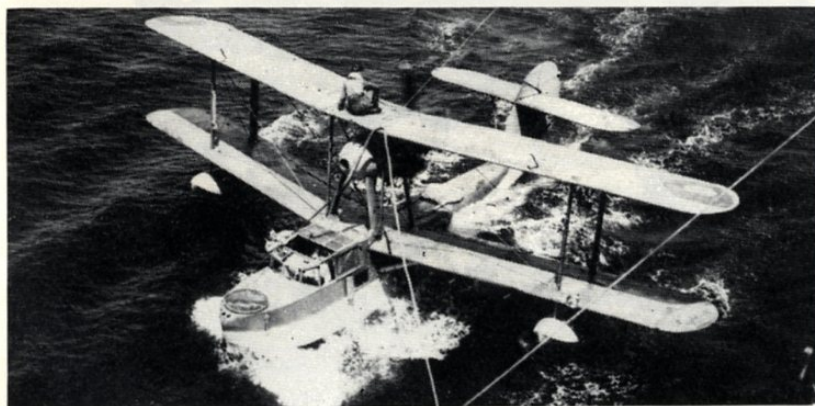
But in such situations the men of the FAA could usually pull out surprises. That very first of all carriers, HMS *Argus*, was still around, relegated to her training role, and

Designed to replace the Swordfish, the Albacore was primarily a torpedo bomber but was also used as a pathfinder and bomber in the Western Desert (The Aeroplane).

in the south of France with a second-line Swordfish unit aboard. Having to sail, because France had fallen, she celebrated Italy's entry into the war by bombing up her Swordfish and unloading them on Genoa then sailing on to Malta where the squadron established itself as a prodigious sinker of Italian ships scuttling back and fro to Africa. Such was the mettle of the Fleet Air Arm.

The Mediterranean now became the focus of naval attention and it was here that *Illustrious* first made her mark, such a mark as affected the course of naval tactics from then on. The date was November 11 1940; *Illustrious* put up a force of 21 Swordfish (six had come across from *Eagle*). The bulk of the Italian Fleet was in Taranto Harbour and it was there the Swordfish went. Darkness had fallen when they attacked, some with torpedoes, some dive-bombing. When they left, the major part of the Italian Fleet was crippled for the loss of only two Swordfish, the crew of one of which was safe. The effect on the Italians was such that their fleet never really offered much fight thereafter; at last it was seen just what carrier-borne aircraft could do and the protagon-

This Walrus, returning to HMS Sheffield, is about to be hoisted aboard after a reconnaissance flight (IWM).



ists of carrier strike tactics had more than just theory to back their ideas.

Soon after this the Germans entered the Mediterranean scene and gave *Illustrious* such an aerial pounding as to put her out of action for most of 1941 (any other ship would have been sunk) but her place was taken by her new sister ship *Formidable*.

Formidable can be said to have had a new generation of aircraft on board, one squadron of Fulmars and two of Albacores. The Albacore had appeared just before the Second World War started as a Swordfish replacement with enclosed cabin and other superior amenities; however, in the end it proved so little an improvement and so less rugged than the Swordfish that the latter outlived it both in production and in service.

The Fulmar was a desperate attempt to meet the need for a viable fleet fighter. It was developed from a bomber and lacked the light weight and the manoeuvrability of the fighter, but it did have a Hurricane-like installation of eight .303 Brownings. With a top speed around the 250 mph mark it was really no match for other fighters but, in favourable circumstances could catch some of the bombers. Some had already been aboard *Illustrious* but it was those of *Formidable* that fought the battles in the Med.

With German air strength in Italy Malta's future was now in jeopardy and the Navy was thrown into a long and desperate series of convoy runs to prevent the island becoming besieged. These convoys were extremely costly in ships and this was almost entirely due to the lack of suitable fighter aircraft to drive away the hordes of bombers which attacked again and again.

To this task came *Ark Royal*, fresh from her activities with Force H in the Atlantic which included the crippling of the *Bismarck* by one of her Swordfish to enable the surface vessels to finish her off.

With *Ark Royal* in the Med and *Hermes* off to the Indian Ocean, there were now no carriers in the Atlantic at all.

Ark Royal sailed on several of the Malta convoys but the inevitable happened and in November 1940 she was sunk. Her aircraft escaped to Gibraltar and from there set up a highly-effective anti-submarine system, bottling up that end of the Mediterranean for the next six months.

By now the shortage of carriers meant that the navy aircrew had begun to operate more fully from shore-bases. The Malta Swordfish squadron was going great guns against Italian and German shipping, an Albacore squadron was flying night intruder and pathfinder operations with the RAF in the Western Desert and a fleet fighter squadron was also operating there at first with Fulmars, but later with Buffaloes and Martlets.

At home Swordfish squadrons were co-operating with Coastal Command in the North Sea and Channel and some FAA fighter pilots had fought in Fighter Command during the Battle of Britain.

With hindsight it can be seen that the Navy's two greatest problems at this perilous time were to obtain effective fleet fighters and to realise the potential of the aircraft

in anti-submarine activities. With Britain hard-pressed to build enough fighters for the RAF's needs, the Navy looked to America and ordered two types of US Navy fighters, the Brewster Buffalo and the Grumman Martlet.

The former was found to be of little value and the order was turned over to the RAF who used them to their detriment in Malaya, but the Martlet, later named the Wildcat, was a fine little fighter and became the turning point for Fleet Air Arm fighter hopes.

Operated at first in the Western Desert with 805 Squadron it later came to the carriers. Talking of carriers, the big fleet carriers were appearing with increasing speed, *Victorious* having made her initial operational sorties in the *Bismarck* affair, but these were used mainly against surface raiders and in the frantic Malta re-supply operations, so had no effect on the U-Boat war which was becoming the most serious single factor in the war.

In this battle aircraft had been co-operating with the U-Boats. FW200s flying out from France, finding the convoys and alerting the U-Boat packs.

Desperate measures were taken to deal with these by putting Hurricanes and Fulmars on catapults on merchant ships with the idea of one-shot flights to shoot down the FW 200s and then ditching alongside the parent ship. Only one such victory was ever accomplished but the next idea proved a winner: a merchant ship was stripped of her superstructure and a flying deck laid along the top. Thus HMS *Audacity* was created out

of the MV *Empire Audacity* and sailed on her first convoy in September 1941 with six Martlets aboard.

Not only did the Martlets destroy enemy aircraft but what was more important they attacked the U-Boats and directed surface vessels to them. By her fourth convoy not only were two FW200s shot down but four U-Boats were sunk and two damaged and only two out of 32 ships in the convoy were lost.

Here, in these pocket-sized carriers, was an important answer to the U-Boat menace. So these escort carriers, as they were termed, became a priority and not only were merchant ships converted but purpose-built carriers were laid down. Unfortunately building ships takes time and it was over a year before sufficient were available to make any difference to the picture.

The Navy now found itself involved in the German fighting in Russia. Stalin was calling for help and the Home Fleet attacked German installations in Northern Norway with air strikes from both *Furious* and *Victorious*. The latter became very involved in strikes on German shipping in Norwegian waters, during which she nearly put paid to *Tirpitz* with a torpedo strike, an event which in effect was just as effective for, worried at the possible loss of this capital ship, she was ordered to remain in harbour whilst there was an aircraft-carrier in the Home Fleet, a requirement that the Navy was happy to fulfil. So she never again put to sea.

But more tiresome were the Russian con-



The Fairey Seafloat was a light spotter aircraft flown off cruisers' catapults and was instrumental in the Graf Spee action (Real Photographs).

voys. Britain pledged itself to supply Russia with much war material and this had to be taken along the Arctic seaboard of Norway and Russia. In long, cold convoys the ships were attacked again and again by German aircraft and U-Boats and losses were phenomenally high. Here again the carriers of the Home Fleet were involved, attempting to repulse the enemy air attacks in the most hazardous conditions.

Before 1941 was out, however, the Navy's operational limits had been stretched even further. With lightning swiftness Japan opened up the war in the Far East with many juicy pickings to be had. Before long Malaya



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was falling and the Navy, seemingly unable to learn from experience, or perhaps stretched beyond its limits, sent two battle-cruisers into action without air support — both *Repulse* and *Prince of Wales* were bombed to the bottom by Japanese aircraft.

To combat the Japanese Navy the Fleet Air Arm had two carriers; *Hermes*, which was likely to be more of a liability, and the new *Indomitable*, the latter tied up in ferrying Hurricanes for the RAF in Java, where they were captured by the Japanese.

In this situation, after the fall of Singapore, the Japanese came raiding in the Indian Ocean, attacking Ceylon and finding *Hermes* without aircraft or defences, promptly sank her. Inexplicably they never returned in any force to this area.

Indomitable moved across to attack Madagascar, a copybook operation in which she was joined by *Illustrious*, while *Formidable* joined the Eastern Fleet in Ceylon for protective duties. But with Madagascar tidied up only *Illustrious* remained, the other two hastening to cope with the furore in the Mediterranean.

Here the efforts were all turned to the desperate plight of Malta. Any convoy there had to be bolstered up with as many carriers as possible, some of them acting in a ferrying role, taking Spitfires to Malta for its own defence. By this time in the war all ideas about Hurricanes and Spitfires being unable to operate from carriers had gone, Sea Hurricanes were already in service on the Fleet Carriers and Seafires were on the way.

The greatest of all the Malta convoys had taken place in August 1942. Code-named 'Pedestal' this operation involved *Eagle*, *Furious* (in a ferry role), *Indomitable* and *Victorious*. The convoy got through with murderous losses but with enough supplies and Spitfires to keep Malta going. *Eagle* was sunk, *Furious* flew off her Spitfires and returned safely, the other two were so badly damaged that they were non-effective; a costly operation.

At home the year had begun disastrously heroically. The two big capital ships *Scharnhorst* and *Gneisenau* had made a dash from Brest to Germany up the Channel in February 1942 and, by a series of mishaps, had not been spotted until too late. The only attack to reach them was a supremely gallant effort by six Swordfish of 825 Squadron led by Lt-Cdr Esmonde. They

were all mown down in the attack and nothing was accomplished, though Esmonde was awarded the VC.

However, although there was little to show for it, 1942 was the year in which, at last, the Fleet Air Arm came out on top. For it was in this year that the combined production resources of Britain and America began to meet the quantitative needs of the Fleet Air Arm in terms of ships, and it was also the year in which the FAA began to receive aircraft with which it could fight and win.

The Sea Hurricane had given the fighter boys a chance and, together with the Martlet from America, was making inroads into enemy bombers. But the real problem was that the Navy, having been starved of practical aviators during the inter-war years, was unable to formulate and have designed the types of aircraft which would be effective on board carriers and the types they had designed were bugged by all sorts of development difficulties.

The Barracuda, which should have already been in service, was still unready and the Firebrand hit so much trouble that it was not a viable proposition until the war had ended. Navy eyes turned westwards and some of the new designs for the US Navy were ordered for the Fleet Air Arm. It was the arrival of these that paved the way for the years of fruition ahead.

A foretaste of what was in store came at the end of 1942. This was Operation 'Torch', the landings in Algeria which helped to put paid to Germany's occupation of Africa. For this the Navy had seven carriers, two Fleets, *Formidable* and *Victorious*, three of the new Escorts, *Avenger*, *Biter*, and *Dasher*, and two oldies, *Furious* and, believe it or not, *Argus*.

The strike aircraft were mainly Swordfish and Albacores, but what was more important was that the fighter squadrons had Sea Hurricanes, Martlets (now known as Wildcats) and the first Seafires. Their task was to maintain air superiority until the RAF and USAAC was established ashore as well as to guard against sea attack, and they did so, magnificently.

Air superiority had never been the Fleet Air Arm's privilege before but from this moment on the stage was set for the Fleet Air Arm to move forward instead of just barely holding its own. The dark days were over at last.

The Grumman Martlet was the first competitive fighter the Fleet Air Arm had. Shown here are the first ones to go into action, with 805 Squadron in the Western Desert (Captain P. C. S. Chilton).



THIS MONTH'S conversion is, as promised, on the wounded trooper of what appears to be the 13th Light Dragoons. He is being looked after by a colleague who is desperately trying to staunch the blood from what looks like a fatal sword thrust; while the victim unconcernedly is trying to attract the attention of the 17th Lancer trooper who is cradling a wounded trumpeter, on horseback, in the central group.

This, the act of waving I have altered. My reasons for doing so are two-fold. Firstly, if you look closely at the painting you will find that it has been carefully constructed, like most Victorian paintings, using all the now well-known constructional tricks where, by a series of hidden — and not so well hidden — lines, the eye of the viewer can be led around the painting, like a dog on a lead, from one group of figures to the next. The only vertical lines in this particular painting are of a bunch of lances stuck in the ground as a rallying point. These serve to stop the eye, and separate the general group, which is itself on a lighter ground, from the confusion on the left. The painting, being a two dimensional art form, allows these tricks to work far more easily than they would in a three dimensional structure.

As the upraised arm of the wounded trooper, to my mind, only serves as a lead-in to the central group, I have decided to dispense with it. Secondly, I do not think that anyone in his right mind, with what I can only suppose (from its position and the amount of blood) to be a fatal sword thrust to the heart/lung region, is going to be waving to anyone, albeit unconcernedly to a comrade with problems of his own.

This conversion is probably the hardest in the series, and to explain just how it was achieved is no easier. If you succeed with this one, the rest of the series will be child's play, apart from the central group which is just as difficult, and which we will come



More figure conversions from Sid Horton

back to at a later stage.

This one, I hope, will give you many a happy hour in the coming winter months, frantically racking your brains, trying to figure out (ouch!) just 'how he did it', for I realise my own limitations in expressing myself on paper. But I am happy to say that, from the original figures, before they were painted, and a little explanation from me, a 13-year-old 'fanatic' made a good copy, which even surpassed my hopes. So, the words of the old 'steam' radio — 'Have a go.'

You may, as I have mentioned before, have your own particular period in mind, so from the basic conversion and your own imagination could come anything.

The kits needed for this conversion are two of the Airfix Scots Greys and two of the Hussars. The parts you will need from these kits being — the two heads from the Hussar, one body from the Hussar and one from the 'Grey, two sets of arms from the Hussar and two sets of legs from the 'Grey, and the 'flying' pelisse from the Hussar. Consign the rest to the spares box. (Stay with me and you will have the most comprehensive and

expensive spares box in the country.) From the Historex spares List — sword No 228. Expensive! Not really, about £1. Where else, could you buy yourself so much frustration and annoyance for so long for £1? Don't tell me.

This conversion is started from the bottom up. The legs are made first and one set, for the left hand figure, cemented to a temporary base. The work is then that much easier. The arms being intertwined, it is almost impossible to fit the two finished figures together, so they have to be built up together, which, I am afraid, causes difficulty with the painting, but you can't have it all ways.

Take the two sets of legs from the 'Grey kits and carefully carve away the raised stripe and button detail down the seams. Also sand smooth the mould lines. Cement the legs together and allow to dry thoroughly, preferably overnight, then, using drawings 14 to 25 as a guide to both sets of legs, which are similar, start the work. First remove the shaded areas shown in drawing 14. Cement the legs back together again and allow to dry thoroughly before any of

the saw cuts are made. When they are set, and only then, make the diagonal cuts shown in drawings 14, 19 and 22, carefully using a razor saw. These cuts allow the lower portion of the trunk to swivel through approximately 45°. The finished position is shown in drawings 20 and 23.

Now saw right through the legs at the knees and ankles as shown in drawing 14 from the front and 19 and 22 from the side. You will notice that small triangular wedges of scrap plastic have to be added to these cuts, to straighten the legs. These are shown as black areas in drawings 15, 19 and 22. Cement all the components of the legs together. After assembling the legs, check that they are balanced correctly by standing them up on their own. Also check that both feet are firmly on the ground. If not, make the necessary alterations.

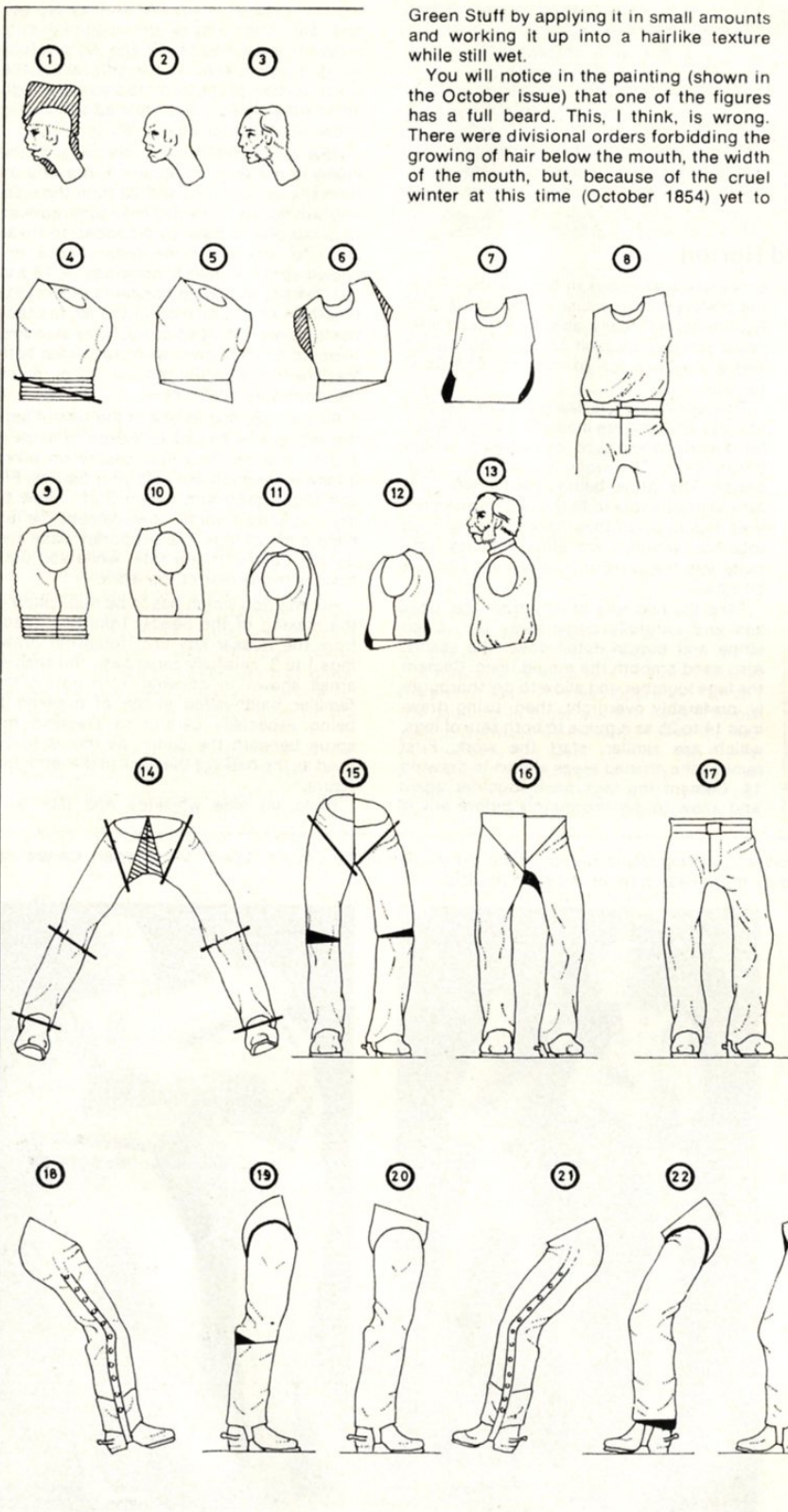
Please note that in one of the sets of legs the left foot is angled outwards to allow a slight variation. You may decide on other differences which will help your figures. Fill any slight gaps with Green Stuff, allow to dry and sand smooth. Now cement the left hand pairs of legs to a temporary base and lay the others to one side, while you continue with the rest of the work.

Another job which has to be duplicated is the making of the heads. Take two heads from the Hussar kits and, following drawings 1 to 3, carefully carve away the shaded areas shown in drawing 1 to obtain the familiar baldheaded shape of drawing 2, being especially careful to preserve the sprue beneath the collar, as this is to be used as the basis of the neck in the left hand figure.

Build up side whiskers and hair with

Below left the two figures as shown in Lady Butler's painting (reproduced by kind permission of the City Art Gallery, Manchester). Centre the two unpainted figures showing areas of filling. Right rear view of finished models.





Green Stuff by applying it in small amounts and working it up into a hairlike texture while still wet.

You will notice in the painting (shown in the October issue) that one of the figures has a full beard. This, I think, is wrong. There were divisional orders forbidding the growing of hair below the mouth, the width of the mouth, but, because of the cruel winter at this time (October 1854) yet to

come, full beards were allowed as facial protection. Most of the photographers who went to the Crimea arrived either during or after this winter so their photographs show the bearded warriors which I think Mrs Butler used as reference.

You should alter the faces slightly. This is simply done by paring away the 'bruise' type nose of one carefully, using a new blade, and giving them a differing amount of hair and side whiskers. When you come to the painting, other differences, such as hair and facial colouring, will help. If you do not do this, these pair will look like twins and the whole diorama will look like a massive piece of inbreeding.

The left hand figure, in shirt sleeves, has the body of a Hussar. The construction is shown in drawings 4 to 8. Carve away all raised decoration and saw right through the body. As shown in drawing 4 you should then have something which looks like drawing 5. IMPORTANT — the body is now reversed, back to front, so that the left shoulder is raised instead of the right. To achieve this, you will have to carve new arm location points, shown as shaded areas in drawing 6. The neck hole also has to be



enlarged. The body is now carved to shape and cemented in place onto the legs. When dry, the scruffy shirt front can be built up using Green Stuff. The body of the right-hand figure is simply the 'Grey' body, cleaned up with a triangular section cut from the top of the collar to allow the head to be bent forward. The head and body can now be assembled and when satisfied, the right hand figure is cemented in position on the base.

Now comes the bit I can't explain. The arms are all made from the Hussar arms but I hope the photographs will help. One which you will notice is a bird's eye view. The reason I can't explain how to do these arms is that there is so much which has to be done by 'eye' alone and only your experience will tell you when they are 'right' to suit your own figures. There is one thing to remember here and that is that the right-hand figure is supporting the other and you have to get the weight and balance right.

The shirt collar, braces and belts are all made from the 5 thou plastic card supplied with these kits. The coat over the right-hand figure's arm is made by cutting the back and one sleeve from the 'flying' pelisse from the Hussar kit and carving it to a convincing shape. The collar and the back of the coat which falls on the inside of the arm are made from 10 thou plastic card. The shape of the collar is obtained by wrapping a strip of plastic card around a brush handle, which you then dip into very hot water. After removing it, hold it in position around the handle until it cools. You then cut to shape and cement in place.

Painting

Left-hand figure — shirt, white; overalls — mid-grey, with a double white stripe; braces — buff canvas; boots — black. **Right-hand figure** — both coats — navy blue, white collars and cuffs; buttons — brass; waist belt — yellow, red, yellow, etc; overall, etc, the same as the other figure.

Should any reader have any success with these articles and has photographs of them, I would be most obliged if they could send them to me via *Airfix Magazine*, so that I can judge the success of the articles.

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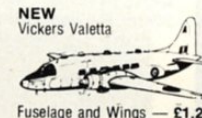
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in the field

Terry Gander and Chris Foss

Foreshadowing Airfix's new kit — the Scorpion family



Above Scorpion. Items to note are the crew's 'bone domes' and the tool stowage. **Left** Scimitar with 30mm Rarden gun.



Striker. Normally the missile boxes are carried lowered and are only raised when ready to fire.



Spartan. In service this vehicle will carry a No 14 battlefield surveillance radar.

THE SCORPION light tank is now in service with the British Army in some numbers, and is also being produced for the Belgian Army along with a few other foreign buyers. Despite the versatility of the Scorpion in its basic form it cannot fulfil all the roles that a modern AFV is called upon to carry out, and so a range of specialist vehicles has been developed using the basic Scorpion chassis. These specialist vehicles are being produced for the British Army and will doubtless be offered for sale elsewhere, and bearing in mind the export success of such vehicles as the Saladin and Saracen it seems very likely that the Scorpion family will be in widespread use for many years to come. All the vehicles mentioned below are produced by the Alvis Division of British Leyland who were most helpful in providing the material for this article.

Scorpion

The basic light tank version already in widespread use with the British Army. Armed with a very effective 76mm gun developed from the gun used in the Saladin, the Scorpion has the ability to knock out or disable most AFVs it is likely to encounter, but its role is not that of a fighting tank but rather more towards a reconnaissance and patrolling role.

A 7.62mm GPMG or ranging machine-gun can be co-axially mounted in the turret, and the normal crew is three. Internal dimensions are a bit tight so that the crew have to be measured to see if they can fit! Even so a wide range of navigational equipment and monitoring kits can be fitted into the vehicle.

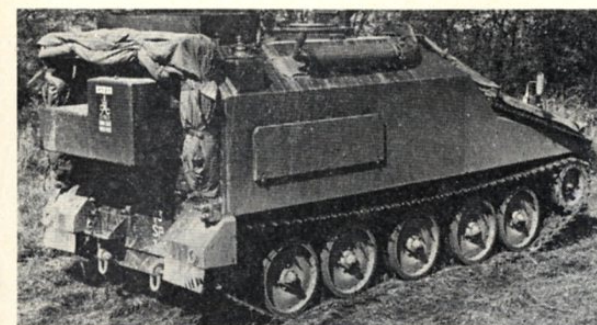
The Scorpion can wade water obstacles up to 3.5 feet deep without preparation but collapsible screens can be erected for deeper water. A propeller kit is at present under development for all members of the Scorpion family. Two Scorpions can be carried in one C-130 Hercules aircraft.

Scimitar

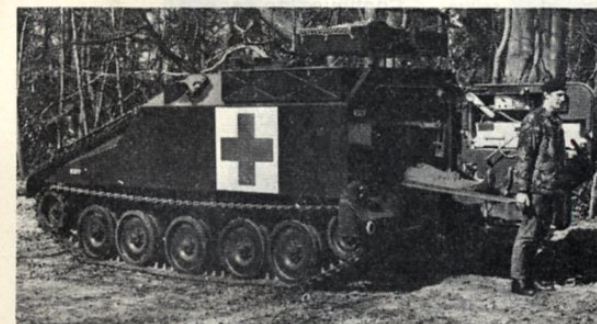
The Scimitar is basically similar to the Scorpion but differs in using the potent 30mm Rarden Cannon as its main armament. The Rarden gives the Scimitar the ability to tackle enemy APCs and AFVs and is thus rather more of an anti-tank version than the Scorpion. A wide range of ammunition is under development for the Rarden, including an APDS round along the lines of those already in use in the 105 and 120mm tank guns. With a calibre of only 30mm for the sabot part of the shell this should produce a projectile with a very high muzzle velocity that should be able to penetrate the heaviest tanks. Scimitar is already in service with the British Army.

Striker

Both the Scorpion and Scimitar are capable of tackling enemy tanks at relatively short ranges only but the Striker is capable of attacking targets at ranges measured in thousands of yards. It is able to do this by using the BAC Swingfire guided missile, and each Striker carries five of these missiles ready to fire with another five stowed internally.



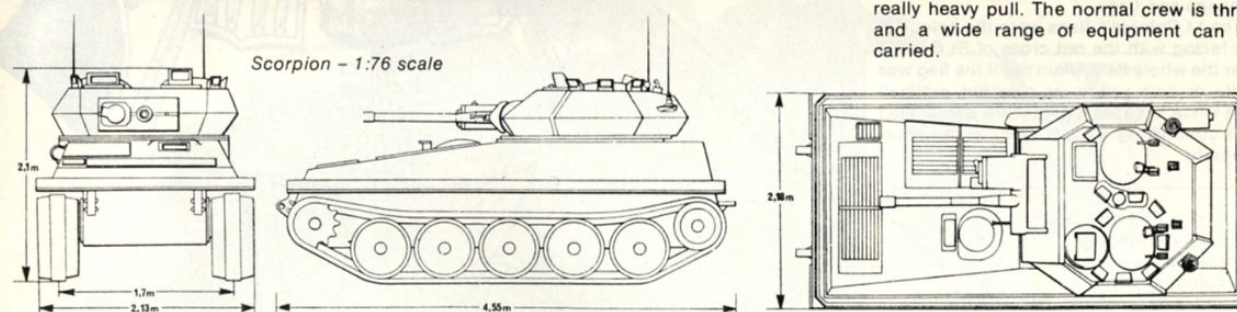
Sultan. Note the stowed penthouse awning. This vehicle is on trials at the Military Vehicle Experimental Establishment (MVEE) at Chobham, Surrey.



Samaritan. It is not certain whether the top stowage boxes will be standard.



Samson with spade lowered.



Basic dimensions	Length (gun forward)	Height (cupola)	Height (hull top)	Width (overall)	Width (tracks)	Battle weight
SCORPION FV101	14' 4 3/4"	6' 10 1/2"		7' 2"	7' 0"	17,500 lb
SCIMITAR FV107	15' 6 3/4"	6' 11 1/4"		7' 2"	7' 0"	17,400 lb
STRIKER FV102	15' 7 3/8"	7' 3"	5' 8"	7' 2"	7' 0"	18,126 lb
SPARTAN FV103	15' 10 1/2"	7' 4 1/2"	5' 7 3/8"	7' 2"	7' 0"	18,016 lb
SULTAN FV105	16' 4 1/2"		6' 7 3/8"	7' 2"	7' 0"	17,457 lb
SAMARITAN FV104	16' 4 1/2"		6' 7 3/8"	7' 2"	7' 0"	16,995 lb
SAMSON FV106	16' 2 1/4"	6' 7 3/8"	5' 7 3/8"	7' 2"	7' 0"	17,642 lb

The crew consists of three men and a 7.62mm GPMG is carried externally on the commander's cupola. Missile guidance can be carried out from inside the tank but a mobile sight can be used up to 100 metres away from the vehicle if the tactical situation requires it.

Spartan

Spartan is the Armoured Personnel Carrier (APC) of the Scorpion family, and due to its relatively small size it can carry only four infantrymen. It has a crew of three, of whom one is a gunner using an externally mounted 7.62mm GPMG. The four infantrymen are in an armoured box from which they can use their weapons if necessary, and there is stowage for such items as a Karl Gustav anti-tank gun and personal kit.

Sultan

Any mobile force used in modern warfare needs a mobile command post and Sultan is the member of the Scorpion family developed for this role. It has greater headroom than the Spartan and it houses extra radios, mapboards and batteries, and can carry a complement of five or six. To give extra working room when parked a collapsible penthouse is provided at the rear which when extended measures 8.5 feet in length, 6.33 feet high and 6.5 feet wide.

Samaritan

Samaritan is a direct development of the Sultan hull to provide an armoured ambulance. Four stretcher cases can be accommodated and up to six seated casualties. In addition to the driver, the commander also acts as a medical orderly.

Samson

To complete the Scorpion family, Samson has been developed to be used as an Armoured Recovery Vehicle (ARV). It uses the Spartan hull which houses a winch with a maximum pull of 12 tons and an external spade is provided at the rear to assist in a really heavy pull. The normal crew is three and a wide range of equipment can be carried.



british army uniforms 1660-1900

Marlburian Ensigns by Bryan Fosten

A CLOSE EXAMINATION of the De Vos 'Marlborough' Tapestries in Blenheim Palace pays great dividends to the military antiquarian. Not only is a wealth of information given for the dress of General Officers and their staffs and single figures of soldiers but a tremendous detailing of masses of troops in the background.

For example there are several examples of columns and lines of infantry manoeuvring before going into action. In most of these groups three colours are shown for each unit. When the unit is in line the colours appear in the centre of the battalion with the grenadiers on their right and in column they are placed in the centre with several companies in front and behind.

During James II's reign infantry battalions had a colour for each company. The battalions had 12 or 13 companies with their Colonel, Lt Colonel and Major acting in the dual capacity of Field Officers and Company Commanders.

There is a dearth of information relating to the precise design of colours for each regiment of this period but if a rule is applicable it would seem to be that the Colonel's colours were either plain white or the colour of the regimental facings, decorated in the centre with either the Coat of Arms or Crest of the Colonel or the Regimental Badge, together with a family or regimental motto and in some cases trophies of drums, cannons and flags.

The Lt Colonel's flags were the colour of the facing with the red cross of St George over the whole field, plain red if the flag was white or pale yellow or grey but outlined with white in cases where there was a need of a contrasting outline to show the cross properly.

An Ensign of a line regiment saluting a reviewing general by lowering the colour to the ground with a flourish.

For Scottish Regiments the St George's Cross was replaced by the white saltire cross of St Andrew with a central device similar to the Colonel's in some cases on a white circlet.

The Major's colours were the same as those of the Lt Colonels but with a red pile wavy, and those of the Captains the same but differentiated by either silver or gold Roman numerals in the centre of the top half to indicate their seniority, or a series of silver or gold balls placed over the sheet of the flag to indicate the company's seniority.

Towards the end of William III's reign the custom of regiments carrying 12 or 13 col-

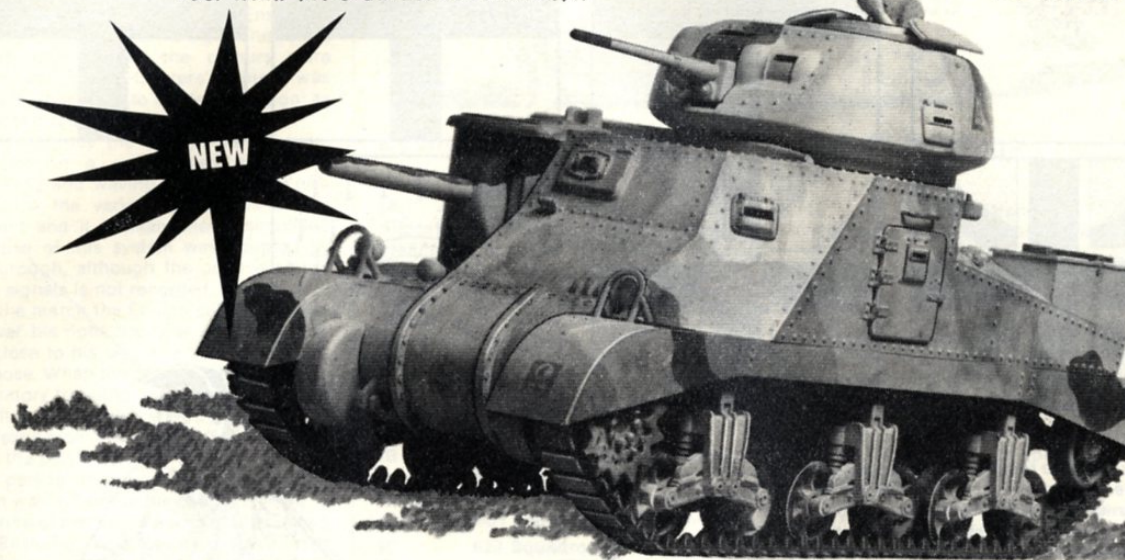
ours was gradually phased out, and by the time Marlborough was leading the British contingent in the Allied Army in Flanders during the War of the Spanish Succession, the practice was almost universally accepted that three colours sufficed although I have been unable to trace any order which prescribes this.

The use of pikemen in infantry battalions had almost ceased by the beginning of the 18th Century but the custom of splitting the regiments into what was known as three grand divisions continued. During the pike period they were formed as the central division with the grenadiers on their right and

Continued on page 250

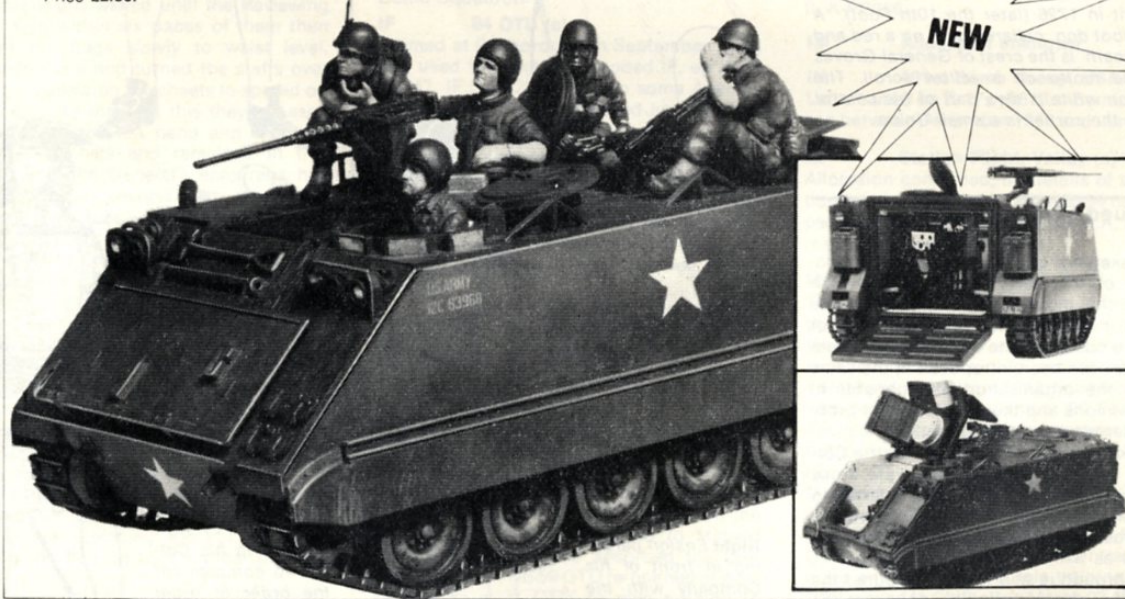


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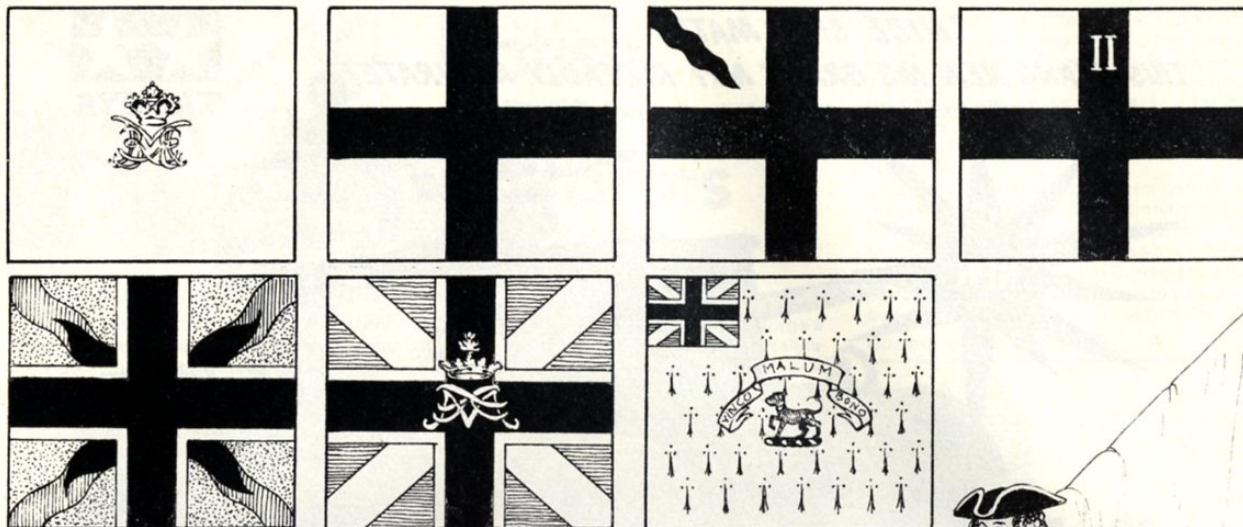


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Above typical line regiment colours according to the early regulations. Top row, left to right the Colonel's, Lt Colonel's, Major's and 2nd Captain's Colours. Second row, left to right the Colour of the 3rd Foot in 1693. The Cross of St George edged white on a dark yellow field and a wavy saltire of crimson and black. 3rd Foot Colour in 1709, the Union with cypher and crown. The cypher W and M is from the earlier reign but altered to incorporate the St Andrews cross at the Union in 1704. This Colour was captured by the French at Malplaquet and is recorded in an MS called Les Triomphes du Roi Louis Le Grand in the Bibliotheque Nationale in Paris. The standard of General Groves' Regiment in 1726 (later the 10th Foot). 'A black talbot dog, collared gold on a red and white wreath' is the crest of General Groves as is the motto on a yellow scroll. The ermine on white is also part of his coat of arms. In the corner is a small Union.

Continued from page 248

the musketeers on their left, but the introduction of the new style bayonet which allowed the musket to be fired with the weapon in position had made the 18 foot long pike obsolete. The three colour system seems to have been introduced at the same time as the organisation of regiments in three divisions and their position was probably determined by this formation.

It is likely that the old colours of the Colonel, Lt Colonel and the Major were those which were kept. The colour was referred to in contemporary documents as a 'stand' so that it was correct to refer to the three flags together as 'Three Stand Of Colours'.

Marlborough is said to have favoured the use of the colours with the drums of the battalion to signal the deployment of his troops and in this respect it is interesting that the origin of the word 'Ensign', which latterly referred to a young officer who



Right Ensign on the march with his Colour resting on his shoulder.

Right Ensign parading in front of his Company with the staff of the Colour resting on the top of his pelvic bone.

Right Ensign flourishing his Colour to complement the order of drum 'to advance in review order.'

AIRFIX magazine

carried a regimental colour, was originally used to 'indicate', to 'give signal' to or to 'show'. The word was spelt in various ways in contemporary writing and 'Ensigne', 'Ensygne', 'Enseigne', 'Enseyne', 'Ensine' and even 'Insigne' are all common. The word derives from the Old French 'Ensignier' meaning 'to indicate' or 'to sign'. The young officers who carried the colours were known as 'Ensign-Bearers' which was gradually shortened to the term 'Ensign' as we know it today.

In James' day the Ensign-bearers were instructed in a complicated system of flourishing and waving of the flag to give signals to the various evolutions of the regiment and it is likely that a simplified derivative of this system was adopted by Marlborough, although the precise nature of the signals is not recorded.

On the march the Ensign carried the colour over his right shoulder with his elbow held close to his side and the sheet of the flag loose. When the column was moved up preparatory to going into action the colour was lifted and carried with the base of the staff resting on the right hip on the waist above the pelvic bone.

On parade the usual position of the Ensign was in front of his company (later in the centre of the line as a whole with the two other Ensigns) where the colour was carried with the end of the staff held in his waist resting on the pelvis, the back of the hand facing front and the elbow raised. The sheet of the flag was allowed to fly loose. The left hand close to the side.

When the drummers beat the call to advance in review order the Ensigns flourished their colours, holding them with both hands, the arms half outstretched both hands as high as the chest.

When the battalion was being reviewed in line the Ensigns waited until the Reviewing Officer was within six paces of them then lowered the flags slowly to waist level, flourished them and turned the staffs over to the right allowing the sheets to spread on the ground. As they did this they released the staff with the left hand and removed their tricorne hats and remained in that position until the General's entourage had passed six paces beyond them, when they replaced their hats, grasped the colours with two hands and with a flourish slowly raised them to their former position.

On the other hand, if the regiment was on the march and passed its own Field Officers or the Commanding General, the Ensigns saluted by turning their wrists over and lowering the flag so that the staff pointed down at 45° with the pike head two feet from the ground, and while still marching took off their hats with the left hand, bringing them down smartly until the arm was extended slightly out from the body at waist height and, without bowing or turning the head, marched six paces beyond the saluting place before replacing the hat and then bringing the flag up to a vertical position again.

In Blackwell's *Compendium of Military Discipline* 1726 he records that there were only eight flourishes of the colours, much used in the past and by that time (1726) to be laid aside. □

December 1974

squadron codes and colours 1939-1956



By Michael J. F. Bowyer and John D. R. Rawlings

IA Station Flight, Scampton (c)
Allocation confirmed, use uncertain. A Wellington III coded IA has been reported, also a Halifax II IA:A.

IA 358th Fighter Group, USAAF (c)
Letters worn by the 366th Fighter Squadron's P-47s early 1944.

IB 453rd Troop Carrier Group, USAAF (c)
Letters worn on C-47s of the 77th Troop Carrier Squadron.

IB 43 Group Communications Flight (c)
Allocation confirmed, letters used on Anson C.12 IB-PH661 and Dakota C.4 IB-FS433.

IC 623 Squadron (c)
Formed August 10 1943 from 218 Squadron, and equipped with Stirling IIIs. Disbanded December 6 1943. Examples of aircraft: IC-P-LK387, IC-E-EE966.

ID 434th Troop Carrier Group, USAAF (c)
Letters worn on C-47s of the 74th Troop Carrier Squadron.

IE 447th Bomb Group, USAAF (c)
Letters used post-war on B-17s of 709th Bomb Squadron.

IF 84 OTU (c)
Formed at Desborough in September 1943, and used Wellington Xs coded IF, eg IF-G-LN247, IF-Q-LN233 and also some Ansons, eg IF-P-EG375. Unit disbanded June 22 1945.

IG 1668 Conversion Unit (c)
Formed Balderton August 15 1943, with an establishment of 16 Lancaster I/Is and 16 Halifax II/Vs. Moved to Syerston November 17 1943 and re-equipped with Stirlings during that month. Subsequently re-equipped with Lancaster I/IIIs, and disbanded April 1 1945.

IG 448th Bomb Group, USAAF (c)
Letters worn by B-24s of 713th Bomb Squadron March 1944 - July 1945.

IH Allocation unknown

II 59 OTU (c)
Unit opened March 24 1941 at Crosby under 81 Group and flying Hurricanes. Moved to Milfield August 8 1942. A Low Attack School opened within the unit February 21 1943 and 59 OTU closed January 26 1943. Then the Fighter Leader School moved to Milfield from Aston Down and absorbed the Low Attack School. No 59 OTU re-opened at Acklington as a '½ OTU' to give training to Typhoon pilots. This unit closed June 6 1945. 'II' coding appears to have dated from this latter period, Typhoon II:E-MN804 being an aircraft used.

II 116 Squadron (c)
The letters II have long been credited to 116 Squadron, an anti-aircraft liaison squadron which formed at Hatfield and operated Lysanders, Ansons, Hurricanes and Oxfords. Examples of its aircraft stationed at Heston include Lysanders II:B, II:O-T1430 (used February 14 1942 to September 26 1942), II:R-V9619, II:U, II:V, II:X, II:Z and Hurricanes II:F and II:Q (one of which was V7112).

IJ 447th Bomb Group, USAAF (c)
Letters worn by B-17s (post-war only) of 710th Bomb Squadron.

IK Bomber Command Instructors' School (c)
Opened at Lindholme, this unit operated Lancasters and Halifaxes and eventually evolved into the Bomber Command Bombing School. Halifaxes used included Mk III IK:W-MZ873 used in 1945 and Mk VI IK:Z-RG349.

IL 115 Squadron (c)
Used on Lancasters of 'C' Flight between November 1944 and August 1945 during which time the squadron was based at Witchford. Examples: IL:D-NG205 and IL:K-PP666.

IM Allocation unknown

IN 401st Bomb Group, USAAF (c)
Letters used on B-17s of 613rd Bomb Squadron between December 1943 and June 1945.

IN Station Flight, Valley (c)
Allocation confirmed, no details of application known. Wellington XIV NB994 has been persistently reported as coded IN:A, but this may be a wrong recording.

IO 41 OTU (?)
This unit, based at Hawarden, formed from the School of Army Co-operation on September 20 1941 and evolved as the fighter reconnaissance training school operating Tomahawks and, from 1942, Mustangs along with Masters. On November 30 1943 No 3 Tactical Exercise Unit formed under 41 OTU but closed March 28 1944. On July 25 1944 No 41 OTU was officially changed from a Mustang to a Spitfire OTU. No 58 OTU re-opened at Hawarden March 12 1945 and took half of the Day Fighter Wing from 41 OTU leaving the latter to concentrate once more entirely upon FR role training. No 41 OTU moved to Chilbolton March 23 1945 and closed there on May 26 1945. Whether 41 OTU at any time used the letters IO still seems open to question, although Mustang AG385 is said to have worn these letters. □

NEW kits and models

Police bike

REVELL HAVE now released a superb 1:8 scale model of the 'finest motorcycle in the world' — the BMW R75/5 — in police guise with fairing and radio, plus appropriate transfers, of course. The model features chromed wheels, detailed engine, clear lights and fairing screen, chromed exhaust pipes and all plug leads and cables. The finished model is extremely attractive, as our photo clearly shows, but the kit is not an easy one to assemble and requires a great deal of patience. The usual problem of cementing chrome-plated parts can be solved by carefully removing the plating from the areas where glue is to be applied, or by using a different type of adhesive such as an epoxy resin. All in all though this kit represents excellent value for money at £3.25.

Paintbrushes

BMW MODELS, 327-329 Haydons Road, Wimbledon, SW19 8LB, are importing a new line in what are claimed to be 'modelling brushes'. In fact, these new brushes are Japanese drawing and writing brushes, and although of high quality, are for the most part of little value to modellers.

The brushes fall into three categories, 'fine', 'flat' and 'round'. Of them all, the three fine brushes (FS — 20p; FM — 25p;

and FL — 30p) are of most use, since they have very fine points and will be good for painting in very fine details. The 'flat' brushes resemble oil painting brushes but have softer bristles; while the 'round' are normal-type large paintbrushes, though without points. These could be used for applying areas of large colour, and are reasonably priced at between 15p and 18p. All in all though, this range will be of more value to anyone who enjoys watercolour painting than to modellers.

Matchbox Helldiver

THE FOURTH MODEL in Matchbox's Orange series has just been released and provides an interesting companion for the latest Red series, the Hellcat, as both the latter and the new SB2C-1 Helldiver are machines from USS Yorktown.

The kit captures the lines of this 'dumpy' American dive bomber and the fuselage is particularly noteworthy for its accuracy, although once again the panel lines are rather overdone. Matchbox have chosen a simple method of hinging the wings to give a fold for a model in the stowed position, but the hinges leave unsightly gaps on the wings and are best filled in.

If a model with the wings folded is

required it would be better to add extra detail to hide the joints and cement the wings in the folded positions. Small components such as the machine-gun, pitot head, tailwheel and arrestor hook are very fine and it is a pity that alternate open/closed rear canopies could not have been provided so that the machine-gunner and his weapon could have been better displayed.

Although the panel lines have been too deeply engraved these can be filled and re-marked, but it is odd that on the tailplane the lines are raised instead of sunk, and therefore have to be sanded off!

Underwing fuel tanks or bombs are provided and the decals enable a machine of VB-17 from the Bunkerhill or VB-4 from the Yorktown to be modelled. Overall this is a much better kit than the Hellcat and could make the basis of a super-detail conversion.

Roodecals

IT IS ALWAYS pleasant to receive samples of other countries' approaches to the various items used by specialist modellers and enthusiasts, so the recent releases from 'down under' of the latest Roodecals were very welcome.

Although the sheets received do not include detailed drawings and photographs as per Microscale and Modeldecals, they are aimed at specific rather than individual aircraft, so this omission causes very few headaches. Photographs of RNZAF aircraft are not exactly plentiful, but on the other hand they are not so rare that research becomes a pain, therefore the Roodecals mentioned will be a welcome addition to most modeller's files.

The sheets received cover the Avenger, Corsair, Dauntless, Catalina, and Kittyhawk and are available in 1:72, 1:48 and 1:32 scale, the latter being especially welcome as far as some of the latest kit releases from Revell and Hasegawa are concerned. The Kittyhawk sheet, which is in 1:32 scale, does cover one individual aircraft, this being the P40 'Wairarapa Wildcat'. The sheet includes the nose markings for this aircraft as well as the 11 'kill' markings.

Colour and size is spot-on and the register problem has been neatly overcome by printing backgrounds such as the yellow circles and black surrounds to the roundel bars, as separate items.

Another useful sheet received was a RAAF/RNZAF post-war insignia one. This contains roundels of all sizes from 6 to 30 mm. The Kangaroo and Kiwi centres are printed separately and there is an abundance of stencil markings and cheat lines for a RAAF/RNZAF Hercules. Badges for 37 Squadron RAAF and 40 Squadron RNZAF are included on a separate sheet together with a gold background which adds a delicate final touch.

Sheets are available from Modelcraft, Box 118K, GPO Melbourne 3001, Victoria, Australia at \$1.30 for each one in 1:72, 1:48 and 1:32 scale plus 40 cents Airmail postage. Individual sections such as the Daunt-

MODELDECATS

PLASTIC KIT SPECIALISTS—ASSOCIATE MEMBER I.P.M.S.

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1/72 SCALE

All listed sets available:
1: BAC Lightning Mk. 1A, 2 and 6 (six alternatives in RAF service).
2: F-4 Phantom (VFMA-531, USMC; 497th TFS, USAF and 767 Sqn., RN.).
3: N.A. F-100D Super Sabre (four alternatives in USAF service).
6: U.S. Navy (F4U-1A Corsair, VF-17; SB2C-3 Helldiver, VB-7; OS2U-3 Kingfisher, 7: RAF Hunter F.6, 14 Sqn.; Phantom FGR2, 6 Sqn.; Meteor F.4, 63 Sqn., and Harrier GR.1, 1 Sqn.)

10: USAF-S.E. Asia (RF-101C, F-105D, A-1H and EC-47N).
11: F-102A, 460th FIS, USAF; Harrier GR.1, 4 or 20 Sqn. RAF. Sabre 6, 430 Sqn. RCAF and alternative RCAF Sabre fin emblems.
12: Phantom FGR.2, 17 Sqn., RAF; F-104G, Belgian A-7, and USAF TAC Badges.
15: USMC AV-8A Harrier, VMA-513, US Navy A-7E Corsair, VA-113 and F-4B Phantom, VF-111.
16: USAF-S.E. Asia (2): F-4E Phantom, 34TFS, 288TFW, Cessna 0-2A 23 TASS, AC-47 432TRW, and USMC OV-10A Bronco, HLM-267.
17: T-33, RCAF; F-35 Draken, 725 Sqn., Danish Air Force; Mosquito FB.VI, 4 Sqn. RAF. Skyhawk, 805 Sqn., RAN, and A-4K squadron markings for 75 Sqn., RNZAF.
18: Royal Navy—Post War: (Gannet 4 COD, Sea Hawk F.1., 898 Sqn., Wessex Mk. 1, Ark Royal, and Avenger 6, 831 Sqn.).
19: West German Air Force and Navy (RF-4E Phantom, AGS1 or 52); F-84F Thunderstreak, Jabo 33; RF-84F Thunderflash, AGS1; Sea King Mk. 41.
20: H.S. Buccaneer S.2., 800 and 809 Sqn., F.A.A.; NF-5A Freedom Fighter, 314 or 315 Sqn., Dutch Air Force, and L-20A Beaver, 334 Sqn., Dutch Air Force.
21: A-4E Skyhawks VMA-311 VA-94; A-4F Skyhawk, VA-164, AD-4 Skyraider, VA-65.
22: A-7D Corsairs, 356 TFS, 354 TFW., and 40 TFS, 355 TFW., with alternative decals for 357 TFS, 355 TFW., 50 TFW., and F-86A Sabre, 116 FIS.
23: Phantom F.G.1., 43 Sqn. Harrier, G.R.1A, 3 Sqn. Lightning F.2A, 92 Sqn. All RAF.
24: RAF Hunter F.6, 79 Sqn. Phantom F.G.R.2 41 Sqn. Sea Venom F.A.W.21 809 Sqn. Sea Venom F.A.W. 21 890 Sqn. F.A.A. Wyvern S.4, 831 Sqn. F.A.A.
25: Lightning F.2A, 19 Sqn. Canberra B(1) 16 Sqn. Harvard T.2B, 500 Sqn. Hunter FGA.9, 45 Sqn. All RAF.
26: Buccaneer S2B., 15 Sqn. Hunter FGA.9, 58 Sqn. Canberra B.2 10 Sqn. Gazelle H3T C.F.S. All RAF, R.N. Gazelle HT2.

MODELDECAL style fully illustrated instruction sheet, giving decal locations and model scheme details, is included with all Modeldecals, and commencing with set No. 17, a selection of photographs is also included.

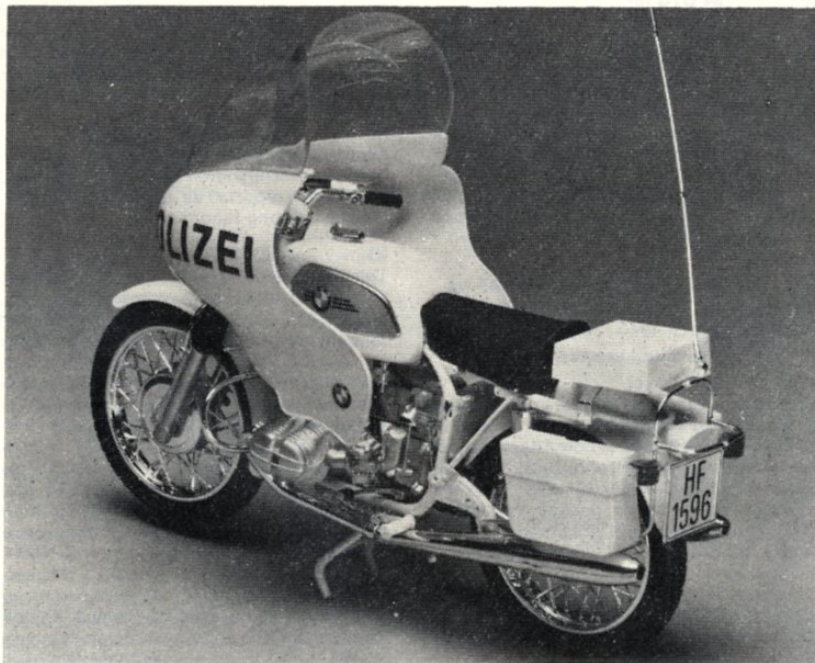
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Continued on page 254

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less, Corsair, etc., can be purchased for 30 cents plus 35 cents post and packing. All currency quoted is Australian dollars. Review samples were kindly supplied by Modelcraft.

Metal figures

TAMIYA, BEST KNOWN of course for their superb range of large-scale AFVs, have now branched into the metal model soldier market with the first four figures in a new range. Priced at £1.25 each, they are to 1:25 scale and come in kit form, but with plastic weapons and equipment for some reason. The kit boxes also contain a first-class two-tier stand and excellent painting instructions.

The first three figures make a superb group: German Second World War squad leader, rifleman and MG34 gunner all in crouched action stances; while the fourth depicts an artillery officer who could, however, be painted with different waffenfarbe (piping) to represent various branches of the Wehrmacht.

The only small criticism we have is that the metal used is very hard, presumably to permit maximum detail and definition, but this makes life difficult for anyone who wants to convert the figures.

88 mm Flak 18

HASEGAWA'S NEW 88 mm Flak 18 kit is an ideal, almost essential, companion to their 8-ton SdKfz 7 half-track reviewed here in September, and is to this firm's usual high standard. Fit of parts is excellent, excess flash minimal and the instructions clear to even the youngest modeller.

Seven crew figures are included should you wish to finish the model in an 'action' scene, and being to 1:72 scale the gun is also ideal for inclusion in Second World War German airfield dioramas. Price is 40p from Ren-models of Cambridge.

Quad 20 mm Flak

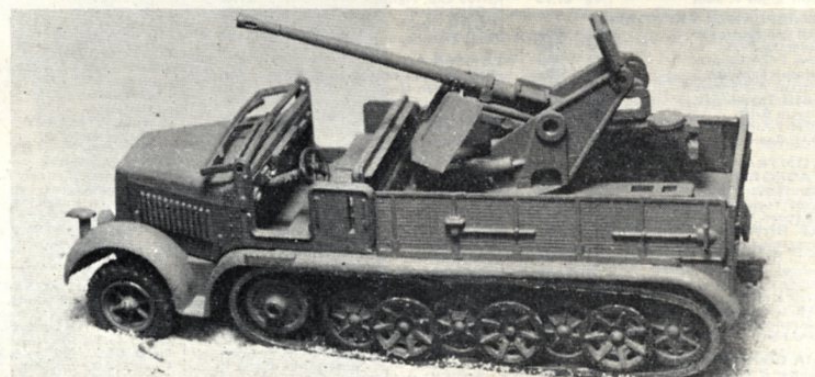
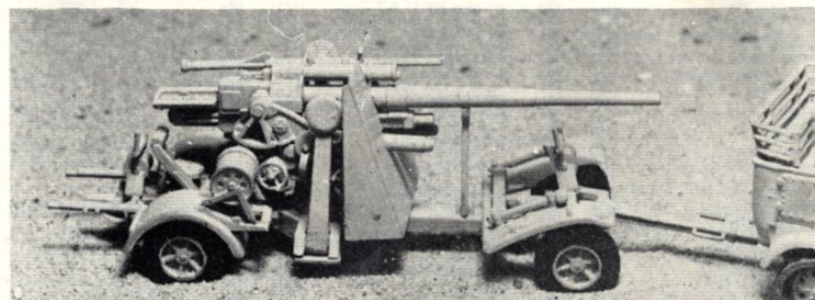
THE QUADRUPLE-MOUNT 20 mm Flak on an SdKfz 7 half-track is a nicely detailed addition to Hasegawa's fast-growing range of 1:72 scale military vehicles. With a crew of seven, some with alternative positions, the kit goes together well to produce a realistic replica.

The track is perhaps the worst feature as it is too thick and stiff to contour well round the sprocket and rear idler; removal of some of the sprocket teeth will help the fit as their spacing does not coincide with the locations in the track!

Painting instructions are adequate with transfers for three alternative finishes. As with all other Hasegawa kits reviewed here, our model was supplied by Ren-models of Cambridge, and costs 40p.

37 mm Flak

ANOTHER VARIATION on the SdKfz 7 half-track theme is Hasegawa's new model mounting the German 37 mm gun, which has long been a favourite conversion pro-



ject using the Airfix SdKfz 7 as a basis. However, this kit is, of course, to 1:72 not 1:76 scale, and there is an appreciable size difference if the two scales are combined in a display. There are now nearly 20 models in the Hasegawa range, however, and doubtless more to come, which gives enough scope to start a separate collection in this

Top the first four in Tamiya's new 1:25 scale metal figure series. Second Hasegawa Flak 18. Third Hasegawa 20mm Flak. Bottom Hasegawa 37mm Flak.

scale (especially since ESCI are now beginning production of military kits to the same 1:72 scale).

The only difference between this kit and the 20 mm version above lies in the box artwork and the sprue containing the gun parts, otherwise the same comments apply. One thing we forgot to mention in the above review is that the half-track sides can be modelled in the vertical travelling position or lowered for action. 40p from Ren-models again.

Tamiya B52D

BOEING'S SWEEP-WING B52 has been the backbone of the USAF SAC since 1955 and in one guise or another is likely to soldier on for a long time yet. It is ironic, as far as British modellers are concerned, that both the B47 and B52 are available in 1:72 and 1:100 scale while the British V-bombers still lack the attraction that manufacturers seem to require before they will go into production. Maybe one day the balance will be redressed and it will be possible to stand a 1:72 or 1:100 scale Victor alongside its contemporary from across the Atlantic. Let us hope so!

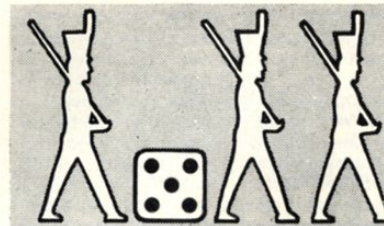
Tamiya have recently re-issued their 1:100 scale kit of the B52F (not G which had a shorter fin/rudder as reported in other journals) but this time in the B52D configuration. The only difference between the kits is in the shape of the engine cowlings which have been retooled to depict the J57-P-19 units of the 'D' version. Apart from this tooling change, Tamiya have also used the rework to pay some attention to surface detail and they have done this commendably well, giving a multi-texture appearance that certainly adds an air of authenticity to the completed model.

The colour of the plastic has also been changed from silver to dark green and this makes life very much easier when it comes to painting, especially if the multi-colour Vietnam scheme is chosen. The extent of the Tamiya research is evidenced in this aspect where they very carefully point out that schemes seen in Vietnam varied from B52 to B52 and the transfers supplied for each model represented in the kit allow either of the more commonly used ones to be employed.

The 152 parts fit perfectly and there is a minimum of filling to be carried out, which makes the model a joy to build. Care has to be taken in obtaining the correct amount of anhedron on the wings, especially if the completed model is to represent a fully loaded aircraft in which case the wing stabilising wheels would be touching the ground. On unloaded aircraft the stabilisers are clear of the ground despite the fact that the wings still droop.

The complex undercarriage is well reproduced as are the wing flaps and bomb load. Transfers are for the 'Pink Panther' of the 92nd Squadron, 92nd Strategic Aerospace Wing, 15th Air Force, a B52D of the 346th Bomb Squadron, 99th Bomb Wing, 2nd Air Force, and a silver SAC machine.

At £5.50 the model represents very good value for money and although this may sound a lot there is an awful lot of aeroplane included in the attractive box.



news for the wargamer

Frigate

THIS IS THE title of a new board wargame from Simulations Publications UK, PO Box 46, Altrincham, Cheshire WA15 6PE, which attempts to re-create 'sea war in the age of sail'.

Costing a very reasonable £3.99, the game comes attractively packaged in SP UK's new-style vac-formed plastic container which includes 24 lidded storage containers in which you can keep the playing counters separate and safe, greatly facilitating setting-up time.

Instead of the usual large playing map, *Frigate* contains six smaller hexagonal-gridded sheets which may be joined together in virtually any configuration. This way, if the wind continues blowing strongly in one direction, forcing the ship playing counters to move predominantly in a single direction, instead of their being forced off the map edge you simply place a new square in front of them — rather like dominoes!

The die-cut cardboard playing counters are each marked in a different colour to denote nationality — French, Spanish, Italian, British, Dutch or American — and are printed with symbols identifying different types of ship — ship of the line, frigate, sloop, corvette or merchantman. Each type of ship has different offensive gunnery points values at different ranges, a defensive points value, a gun rating and an identification letter.

Movement is determined by wind strength and direction and is indicated by markers which are placed on the playing map in accordance with two dice throws — one for direction and the other for velocity. Wind strength and direction can fluctuate considerably during the course of a game, posing unusual problems for those wargamers who are accustomed to seeing their playing pieces at least moving in the desired direction!

Each ship playing counter has a cone of gunnery fire either side of it with a maximum range of ten hexes for a ship of the line, and can fire a broadside at any enemy ship within range. Allowance is made for the raking effect of firing down the length of an opposing vessel, creating more damage.

There is a rather complicated 'command control' system which seeks to simulate the effects of orders being misunderstood or disobeyed. This is rather time consuming and could have been made simpler, though its primary aim is to reflect the different degrees of discipline and efficiency prevailing in different navies at different times.

Twenty battle scenarios ranging from a simple conflict between two ships (USS

Constitution and HMS *Guerriere* in 1812) to major battles (Trafalgar) are included in the playing rules, and provision is also made for boarding parties and capturing enemy vessels as well as disabling them by gunfire.

Altogether *Frigate* is an interesting game, widely adaptable and well worth the money. One way in which it could be used especially successfully would be as the naval side of a land campaign set in any part of the 18th or 19th Century, something which is usually omitted yet which can be decisive.

Triplanetary

GIVEN THE CURRENT vogue for science-fiction wargaming, this new board game should prove extremely popular. Marketed by Simulations Publications UK again, it costs £4.25 and attempts to simulate spaceship warfare within the confines of the Solar System at some indeterminate time in the future.

There are a variety of different types of spaceship counters which move initially by expending fuel points and then continue to travel at a constant rate of acceleration until more fuel points are used to slow the ship down, accelerate it or change its path.

The gravitational fields of the planets exert a realistic influence on movement and can be used to facilitate manoeuvre without the expenditure of fuel points. Combat takes place by means of guns, mines, torpedoes or ramming.

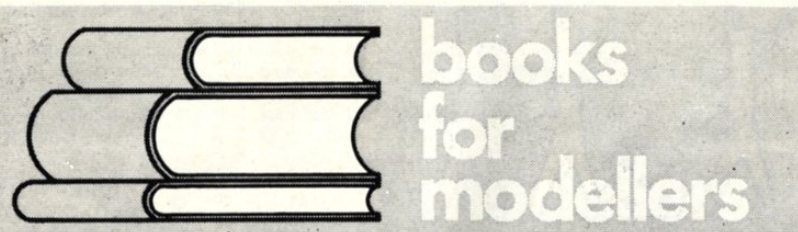
A variety of typical sci-fi scenarios are included in the playing booklet, including a rocket race around the Solar System, the escape of a dissident group from earth in a secret star ship, a pirate raid on a passenger liner, interplanetary war between the colonies and Earth, and even an alien invasion.

Since it is our experience that the majority of wargamers enjoy science fiction and vice-versa, we can see this game catching on in quite a big way. Great fun!

Overlord

ANOTHER NEW Conflict game available from Simulations Publications UK at £4.75 is 'Overlord'. This re-creates the Allies' efforts to break out from the Normandy beach-heads through the bocage, and is an interesting game.

One attractive feature of Conflict games, especially for newcomers to board wargaming, is the simplicity of their rules, and this is no exception, even though naval gunfire support and air power are taken into account as well as action on the ground. Once again, it comes in a handy-sized cardboard box with full-colour playing map, rules, playing counters, combat results and order of battle charts.



Modelling

Classic Ships No 3, **Cutty Sark**, by Noel C. L. Hackney. Patrick Stephens Limited, Bar Hill, Cambridge CB3 8EL. **Price £1.95.**

IT IS A considerable time since PSL published the last in this series of history/modelling books, so this new volume will have an automatic appeal for all sailing ship modellers.

Noel Hackney, who also penned the earlier volumes, is a member of the Cutty Sark Society, and his choice of his 'own' ship is a logical successor to his books on HMS *Victory* and the *Mayflower*.

Cutty Sark begins with the history of this famous ocean racer, her years in the tea and wool trade, her fate under foreign flags, and her eventual restoration and preservation. Then follow chapters on tools and materials for building the Airfix large-scale kit of the ship, colour details for every part, the modifications necessary to turn the basic kit into a first-class museum standard model, and short cuts for those who have only a limited amount of time to spare.

A vital part of this attractive book is the long chapter on assembly and rig, in which every block and every belaying pin is described. Equally important is the final chapter in which the sail rig is described in detail. The text is slightly confusing to follow in places unless you have the actual kit components in front of you, but once you do that it all falls into place — and after all, that is the purpose of the book!

Lavishly illustrated with photographs of the actual ship and of the author's own model, the book can also be used as a reference work for those whose interest lies in the clipper ship era, and it will, of course, make an ideal Christmas present (especially if an Airfix *Cutty Sark* kit is given at the same time).

Aviation

Aircam Aviation Series No 41, **McDonnell F-4 Phantom II in USAF, USMC, US Navy, RAF, FAA and IIAF Service** Volume 2. Osprey Publishing Ltd, PO Box 25, 707 Oxford Road, Reading, Berks. **Price £1.50.**

THIS IS THE second volume of the work dealing with the markings and colour schemes of the Phantom II series, and we cannot see it being the last! A detailed descriptive text covering the F-4 series to date appeared in Volume 1 (Aircam No 30), and this later volume is mainly pictorial. Together, these books offer the modeller an almost overwhelming amount of detail information on the Phantom, and the Aircam production team must be congratulated on an excellent effort. Particularly outstanding is the page

and a half of unit and squadron badges contained in the colour section, covering more than 30 US, British and German units.

Two colour side-views, promised in Volume 1, do not materialise in this volume, which is a pity, and there are also some typographical errors in the type designations and serial numbers in vol 2 (for instance, on colour page 'C', side view 5, the serial is given as 158398, but no F-4Bs ever appeared that far up the number scale. It should read 148398, a first batch F-4B).

In the section devoted to USAF aircraft there are some fascinating underwing loads, F-4E modellers being particularly well-catered-for in this respect. The shot of an F-4E on the page facing the colour sections shows some rather strange extensions fitted to the nose fusing positions of the Mk 82 bombs being carried — but no explanation!

Inside the back cover are two pictures of particular interest to anyone modelling the Revell RF-4E. They show 37+01, the first Luftwaffe F-4F, on the ground and in the air. Of particular note are the correct type marking numbers — 37 — and the lack of slots on the stabilator. The ground shot clearly shows the combat manoeuvring slots on the leading edges of the outer wing panels, and the extended gun muzzle fairing under the nose. The caption to these photos states they depict an F-4E, which is incorrect since the Luftwaffe are only buying RF-4E and F-4F aircraft.

In spite of these small errors, these two books are real value for money even at their new price, and though aimed primarily at modellers, justify a place on the bookshelves of all modern aviation enthusiasts.

British Flying Boats, by G. R. Duval. D. Bradford Barton Ltd, Trethellan House, Truro, Cornwall. **Price £3.15.**

THIS IS A pictorial history of that most graceful of British aircraft progeny — the flying boat. The author of this book gives only a short introduction before starting on the first of 125 photographs that make up the bulk of the book. These photographs are a delight. Many have been seen before but many are new to your reviewer and they show better than any word or drawing the grace and form of that now virtually departed mode of transport. Each photograph is reproduced quite large along with a full and well-written caption and each is full of detail and items of interest. For example, there is a very good picture of a Short Empire being towed up the slipway at Hythe that not only shows a great deal of detail but literally reeks of period flavour. Another such shot is one of a Short Kent at anchor.

Just about every flying boat that was built in the UK is included here and the war-planes are not forgotten either, for there are five pictures of Sunderlands. This is a very pleasant book for any aviation enthusiast, modeller or fan to have around but in these days such a well-produced book has to have a price ticket which at first sight seems high.

Short Stirling Remembered. Wingspan Publications, Taurus Press, VAP House, Ferry Hinksey Road, Oxford. **Price 80p.**

THIS BOOKLET relies mainly upon large clear photographs of the Short Stirling for its impact. Most of the photographs are well known, which is a pity. Some of the exploits of No 7 Squadron, the first with Stirlings and which was based at Oakington (near to our editorial office!), are recorded. There is a partially cut-away drawing of the type, an incomplete map of 'Stirling country', brief notes covering MacRobert's Reply and No 620 Squadron and a feature on men who won their VCs when operating in Stirlings. The booklet is a useful contribution pending the publication of a full history of the type which is now known to be under way and highly detailed.

Jane's Pocket Book 5, Military Transport and Training Aircraft, edited by John W. R. Taylor. Macdonald & Jane's, St Giles House, 49-50 Poland Street, London W1A 2LG. **Price £1.75 (PVC cover).**

THE PVC PLASTIC covers are one of the main features which make these handbooks so attractive to 'spotters' and aircraft enthusiasts in general, since they can be carried in the pocket without suffering the damage and staining common with conventional books.

Containing 262 pages, with a photograph on each left-hand page and a data table and three-view drawing on the right, this useful book lists all the main military transport and training aircraft currently in service, together with details on which countries operate them. One fact which came as a pleasant surprise to us was the several hundred Dakotas still in operational service with 78 air forces! All the major and a large number of lesser types are covered, and while it is a pity that the drawings could not have been made larger, and/or to a constant scale, the majority of the photographs are a delight. Good value.

Story of a Lanc, compiled by Brian Goulding, Mike Garbett and John Partridge. Available from RAF Scampton, Lincoln LN1 2TR. **Price 45p.**

THIS IS A most interesting booklet detailing the career of Lancaster NX611 which now stands at the entrance to RAF Scampton. It is excellently illustrated with plentiful photographs of the machine which has worn an astonishing array of markings. Its story is amply recorded both by the large photographs and the text. By purchasing the booklet, apart from giving yourself much enjoyment if you like Lances, you aid the improvement of Scampton's swimming pool which is also to be made available to local schools at a nominal fee. Cheques and postal orders should be made out to 'RAF

Scampton Non-Public Account'. Well worth getting before supplies run out.

More Bf 109 1940 Fuselage Markings, by Michael Payne. Available from the author at Brensham, Nunton Drove, Nunton, Salisbury. **Price £1.10.**

THIS IS THE second volume to appear carrying profiles of Bf 109s operated against the UK in 1940. Twenty-four profiles appear along with ample details about colouring of the aircraft and various notes upon them. If Luftwaffe wartime aircraft are your interest you will want to add this second booklet to your collection and in so doing you will probably encourage the author to dig for more interesting material. How about some bombers, Michael?

Warships

Warship Profile No 35, HMS Eagle. Profile Publications Ltd, Coburg House, Sheet Street, Windsor, Berks. **Price 70p.**

THE EAGLE WAS one of our first aircraft carriers, and this latest Profile covers its history from the time it was laid down in 1913 as a battleship to its loss on August 11 1942.

Completed in 1920, the early trials, both sea and flying programme, are dealt with in some detail as also are her first commissions. Naturally, her activities in the Second World War account for a fair section of the Profile and these are profusely illustrated with some rare photographs.

Although primarily of interest to the warship modeller, the aviation enthusiast will find this a worthwhile investment as many of the photographs show carrier-borne aircraft both at work and rest.

The very large colour centre-spread gives a plan and starboard side view of the *Eagle* as she was in 1942 with Force H at Gibraltar, together with a much reduced view of the port side and her badge. Line drawings show the layout of the hangar deck, and the flight deck as it was for the 1920 trials, and the illustrations are completed with some tone drawings of four types of aircraft that operated from her.

Military

The King's German Legion, by Otto Von Pivka with colour plates by Michael Roffe. Osprey Publishing Ltd, PO Box 25, 707 Oxford Road, Reading, Berks. **Price £1.25.**

ANOTHER VOLUME in the well-established

'Men-at-arms' series by a recognised authority, this book will be welcomed by all military modellers, wargamers and students of the Napoleonic Wars.

It begins by describing the origins and formations of the Legion, together with its final organisation and strength, then goes on to describe its actions against the French, mainly in Spain and later, of course, at Quatre Bras and Waterloo, where its main claim to fame lies in the heroic defence of La Haye Sainte.

The book is completed by notes on the uniforms, badges, weapons, horse furniture and flags of the Legion, while there are also the usual eight pages of full-colour uniform drawings in the centre. All in all a very well written and worthwhile study, despite its brevity, and good value for money.

Jane's Pocket Book 4, Modern Tanks and Armoured Fighting Vehicles, by Christopher F. Foss. Macdonald & Jane's, St Giles House, 49-50 Poland Street, London W1A 2LG. **Price £1.75 (PVC cover), £2.50 (hard-back).**

PRODUCED TO the same format as the same publisher's aircraft pocket books, this is a 208-page handbook containing photos and brief data tables on most of the tanks, armoured cars, personnel carriers, tank destroyers and scout cars in service with the armies of the world. Apart from such obvious choices as the Chieftain, Leopard, etc., it also includes information on many less well-known vehicles such as Swiss and Japanese tanks, Japanese, Swedish and Russian bridgelayers and others.

The photographs come from a wide variety of sources and vary in quality from excellent to practically unrecognisable, while unfortunately the publishers appear to need a new picture editor since many of the photos have been printed with their turrets chopped off and vast areas of grass in the foreground, or alternatively with half the wheeltrack assembly disappearing off the bottom of the page!

It is also a shame that the text is so short, leaving half of every other page blank: surely this could have been extended to provide a more detailed coverage, or alternatively some three-view plans dropped in?

Altogether a mixed package, useful as a

handy reference for armour enthusiasts but of little practical value to modellers.

European Edged Weapons, by Terence Wise. Almark Publications Ltd, 49 Malden Way, New Malden, Surrey. **Price £1.50.**

THIS FASCINATING book provides an excellent introduction to the vast and complex subject of European edged weapons, a field which includes not only the swords, daggers and bayonets you would expect, but goes right back to prehistoric flint weapons and includes such varied and bizarre weapons as the Saxon scramasax, bills, halberds, partisans, war axes, spears and lances.

Written in Terry Wise's usual fluent and readable style, and illustrated with over 50 photographs and 200 drawings, the book makes a very useful primer for the militaria collector, military modeller, historian and wargamer, and can be highly recommended.

Steam

Loco Profile No 34, The Caledonian 4-4-0s. Profile Publications Ltd, Coburg House, Sheet Street, Windsor, Berks. **Price 55p.**

THE RAILWAYS 'north of the border' have not received quite the publicity of some of the 'Sassenach' lines, but one feature which is well known is the blue engines of the Caledonian.

The 4-4-0 arrangement was used by all CMEs at one time or another and the advent of Dougald Drummond as Caley's locomotive superintendent saw the beginning of a class of big-boilered inside cylindered locos of this type that eventually became known as the Dunalstairs.

Although succeeding loco superintendents carried out various modifications, the basic design of these attractive blue locomotives remained unaltered to the end. This Profile covers the life of the Caley 4-4-0s very thoroughly, with plenty of photos and a colour centrespread showing the two shades of blue used.

From a modeller's point of view, this type of loco is easier to construct than most, with no complicated valve gear to worry about. It will also negotiate sharp curves, and its relatively simple lines look most attractive in its blue livery. Altogether a very worthwhile publication.

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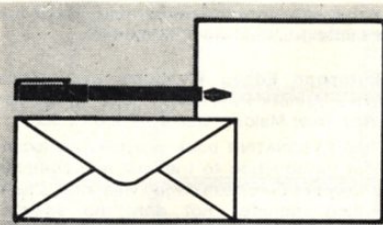
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letters to the editor

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Letters to the editor should be addressed to: the Editor, *Airfix Magazine*, Bar Hill, Cambridge, CB3 8EL. If a reply is wanted, a stamped addressed envelope (or International Reply Coupon) should be enclosed. All photographs submitted for consideration should be clearly labelled with the sender's name and address on the back of each.

Opinions expressed by correspondents on this page are their own and do not necessarily reflect the views of the Editor or Airfix Products Ltd.

Ruston aircraft

THE SEPTEMBER ISSUE of *Airfix Magazine* has just arrived, and the contents are as good as ever.

In the 'Books for modellers' section I was pleased to see mentioned the book *Ruston Aircraft Production*, by John Walls, and in particular the reference to the special scheme applied to the 1,000th aircraft built by that company.

I managed to obtain details of this colour scheme some time ago, and the enclosed

photos, by Neville Franklin, show my efforts in attempting to reproduce this scheme in miniature.

I must apologise for the fact that the model was not rigged at the time the photos were taken, and still remains so, since my views agree with those expressed in a recent article by Gerald Scarborough, ie if in doubt, don't.

However it also gives me the opportunity to record my admiration of the Bristol Fighter, by Peter Grey of Luton, but wish his letter to you had included more details of this fine thread he has managed to find. I hope you will allow him a little space in a future issue to give us these details, and a brand name, if possible, so that other modellers may join him in knowing what to ask for, without running the gauntlet of shop assistants' blank looks.

Returning to the Camel, perhaps I should mention that it was made from one of the 1:72 scale kits, not one of the larger models. J. G. Burgess, Eastwood, Notts.

MAFVA

THE LONDON GROUP of the Miniature Armoured Fighting Vehicle Association is holding an Open Modelling Competition on Saturday, April 5 1975 at the St John's Hall, Kingston Road, Wimbledon, London SW19, from 10 am to 6 pm. This is for members of all relevant modelling societies interested in tracked and wheeled military vehicles, but visitors unaffiliated with any society are welcome. The hall is easily accessible from Southern Region and Underground stations and the Kingston by-pass.

For further details please write to Mr R. Blann at 128 Brudenell Road, Tooting, London SW17, or telephone 01-769 5787 or 01-653 3914.

Going up . . .

AS MOST READERS will probably be aware, printing, paper and production costs have continued to rise steeply over the last year. These have regrettably forced us to increase the cover price of *Airfix Magazine* to 22p from this issue. We would like to emphasise that this increase has been forced on us through necessity rather than choice, and we still consider that *Airfix Magazine* represents excellent value for money in today's modelling market. Ed.

Hannomag drawings

WE WOULD LIKE to point out that the 1:32 scale drawings of SdKfz 251s featured in our August issue were in fact based on a set of 1:35 scale drawings by Bruce Culver featured in Vol 7 Nos 3 and 4 of the American Magazine *IPMS-USA Quarterly*, and would like to record our apologies to Mr Culver and IPMS-USA for omitting to credit them at the time. Ed.

Bristol 138 drawings

SIMILARLY, WE omitted to credit the 1:72 scale drawings of the Bristol 138 featured in our November issue to the artist, Neville Franklin. Sorry Neville! Ed.

Your queries answered

IN ORDER TO help prevent delays and confusion, will all readers intending to write to *Airfix Magazine* please note the following information and post their letters to the appropriate address.

Any query, comment, suggestion or contribution for *Airfix Magazine* should be sent to: The Editor, *Airfix Magazine*, PSL Publications Ltd, Bar Hill, Cambridge CB3 8EL.

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All queries or payments for *Airfix Magazine* subscriptions and back numbers should be sent to: Subscription Department, *Airfix Magazine*, Surridge Dawson & Co (Productions) Ltd, 136/142 New Kent Road, London SE1.

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The author of "The War Game" now opens up a new area of interest for the wargamer — the ancient battles of the Pharaohs, the Assyrians, the Persians, Carthaginians and the Romans. With meticulous detail he describes the warriors and their weapons, sets out their fighting tactics, and their representative worth on the wargaming table, rules and methods of scoring casualties, and illustrates all by re-creating a few well chosen battles. 160 pp, 25 photos, 11 drawings, £3.50.

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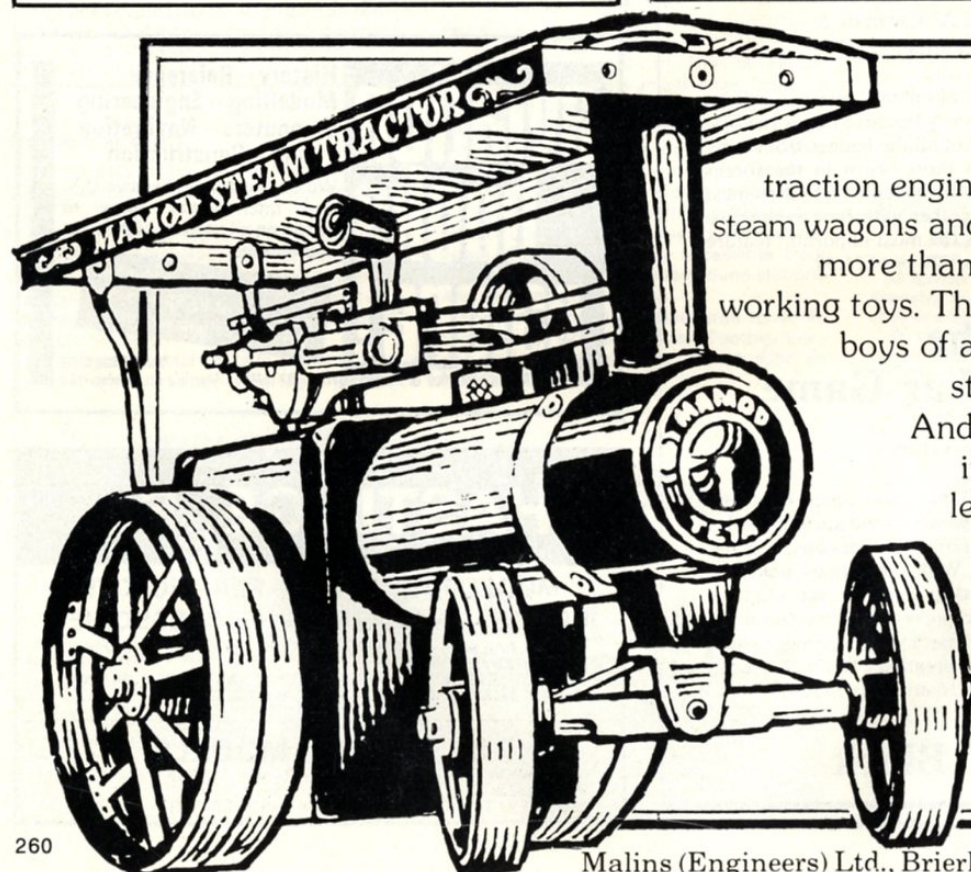
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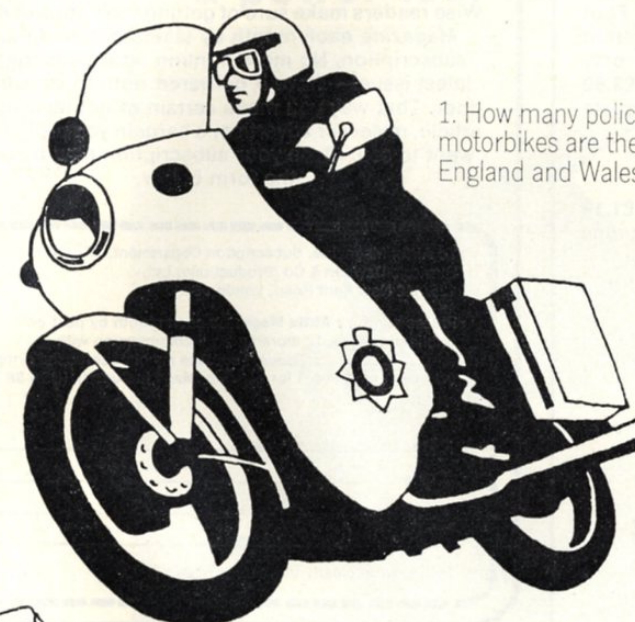
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No.5

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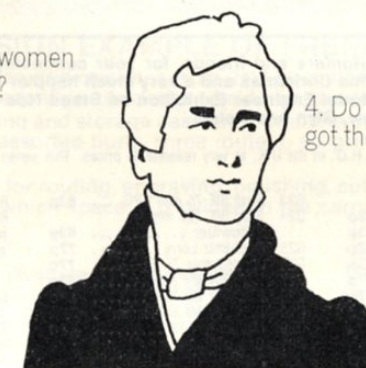
1. How many police
motorbikes are there in
England and Wales?



2. What is the minimum
number of people
required on an
identification parade?



3. Can policewomen
make arrests?



4. Do you know how policemen
got the nickname of "Bobbies"?



5. How many police officers in England
and Wales received national awards for
bravery in 1972?

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present-day working and development of Britain's police. If you
missed any of the previous ones and would like copies, or
would like further information about the police, please write to:-
Police Quiz, Dept 1172 Home Office, London SW1A 2AP.

ANSWERS

1. Nearly 3,700.
2. Eight.
3. Yes, a policewoman has the same powers as a policeman.
4. From Sir Robert Peel, Home Secretary when the Metropolitan Police was formed in 1829.
5. 45.

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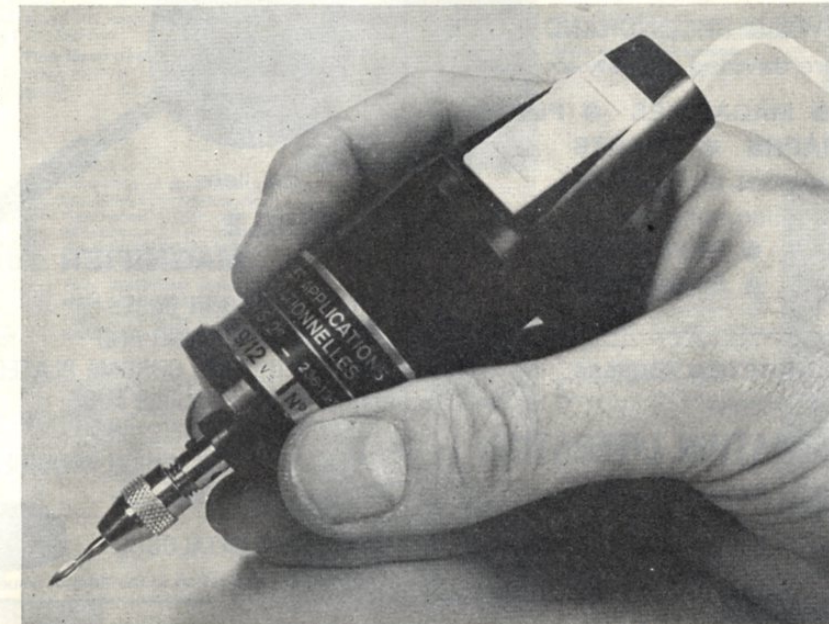
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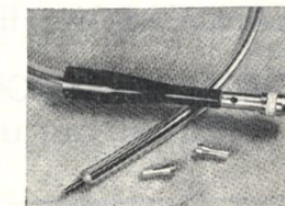
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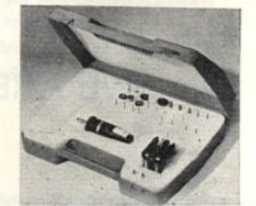
2. Drill shown in stand.



3. Flexible drive approx. 16 in. long with collets.



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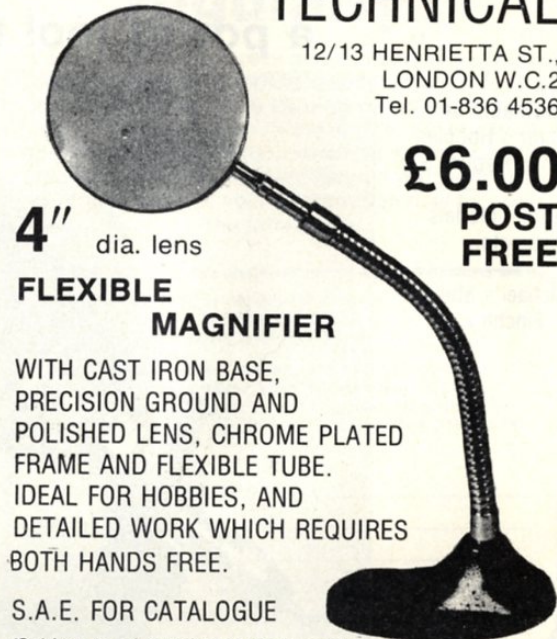
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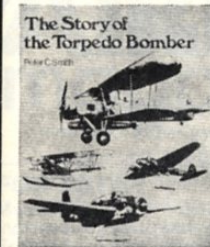
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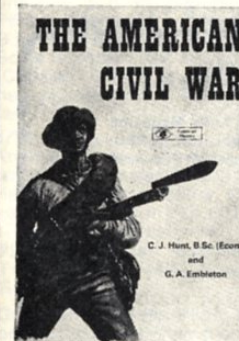
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For aviation enthusiasts the book begins with an account of the Hawker Harrier's current operational status with the RAF and US Marines, including modelling notes of practical value to anyone working in 1:72 or 1:24 scale. This is followed by a feature on American B-29s and B-50s based in Britain between 1948 and 1953, which includes two pages of drawings showing tail fin insignia. Alan W. Hall then gives practical modelling instructions for converting the Airfix Halifax kit into a B Mk II; Bryan Philpott describes a conversion using Airfix He 177 components to produce a 1:72 scale model of the Luftwaffe's wartime jet bomber, the Ju 287; and finally Gerald Scarborough shows how to produce a 1:72 or 1:24 scale model of the Rolls-Royce Dart powered Cavalier Mustang III.

For those who prefer wheels to wings there are two 1:32 scale conversions. First is a model of the Bentley which took part in the 1969 London-Sydney marathon, constructed from the Airfix Bentley kit; while the second model will appeal to military enthusiasts as well, since it is a conversion of Monty's Humber to a wartime wireless truck. There are also two tank conversions for military modellers, the first from the Airfix Churchill kit to the Churchill 3-inch gun carrier; the second showing how to super-detail the Airfix Tiger kit, including all internal components from engine to gun breech.

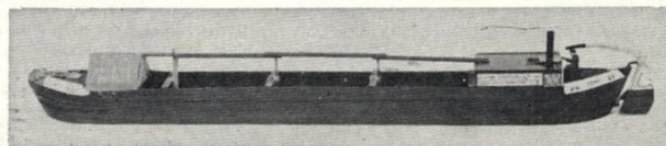
An unusual project for model soldier enthusiasts is a fine conversion of the Airfix 54mm Highlander to a Japanese Samurai warrior, while on the nautical side there are features on modelling the Airfix *Cutty Sark* kit in a bottle and scratch-building a canal narrow boat. An attractive little 00 gauge model of a tunnel inspection and repair wagon by Michael Andress, together with the two regular features. Pick of Photopage and Photo Quiz, complete the line-up for this year's Annual.

Throughout its 96 pages, the book is profusely illustrated with photographs of models and the 'real thing', working sketches, scale plans and colour scheme data, making it an invaluable reference source as well as a practical modelling manual for beginners and experienced modellers alike.

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LS

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Printed in England by Blackfriars Press Ltd., Leicester